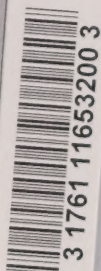


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Ontario

# ENVIRONMENTAL ASSESSMENT BOARD

VOLUME: 295

DATE: Thursday, February 21, 1991

BEFORE:

A. KOVEN Chairman

E. MARTEL Member

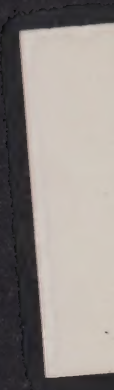
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# ENVIRONMENTAL ASSESSMENT BOARD

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VOLUME: 295

DATE: Thursday, February 21, 1991

BEFORE:

A. KOVEN Chairman

E. MARTEL Member

FOR HEARING UPDATES CALL (COLLECT CALLS ACCEPTED) (416) 963-1249

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HEARING ON THE PROPOSAL BY THE MINISTRY OF NATURAL  
RESOURCES FOR A CLASS ENVIRONMENTAL ASSESSMENT FOR  
TIMBER MANAGEMENT ON CROWN LANDS IN ONTARIO

IN THE MATTER of the Environmental  
Assessment Act, R.S.O. 1980, c.140;

- and -

IN THE MATTER of the Class Environmental  
Assessment for Timber Management on Crown  
Lands in Ontario;

- and -

IN THE MATTER of a Notice by the Honourable  
Jim Bradley, Minister of the Environment,  
requiring the Environmental Assessment  
Board to hold a hearing with Respect to a  
Class Environmental Assessment (No. NR-AA-30)  
of an undertaking by the Ministry of Natural  
Resources for the activity of timber  
management in Crown Lands in Ontario.


-----  
Hearing held at the offices of the Ontario  
Highway Transport Board, Britannica Building,  
151 Bloor Street West, 10th Floor, Toronto,  
Ontario, on Thursday, February 21, 1991,  
commencing at 9:30 a.m.

-----  
VOLUME 295

BEFORE:

MRS. ANNE KOVEN  
MR. ELIE MARTEL

Chairman  
Member



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TOURISM ASSOCIATION





I N D E X   O F   P R O C E E D I N G S

<u>Witness:</u>	<u>Page No.</u>
<u>JAMES F. BENDELL,</u>	
<u>JOHN MIDDLETON,</u>	
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Cross-Examination by Mr. Hanna (Cont'd)	52582
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I N D E X   O F   E X H I B I T S

Exhibit No.	Description	Page No.
1740	MNR publication entitled "Endangered Species in Ontario".	52589
1741	Pamphlet entitled "Ontario Fish and Review", Volume 16, No. 4, dated 1977.	52589
1742	Publication entitled "Canadian Endangered Species, 1990".	52590
1743	Number of taxa of rare, threatened, or endangered species that are affected by forestry.	52590
1744	The six-page introduction, the table of contents, and a sample sheet for one species from the Atlas of the Rare Vascular Plants of Ontario, commonly known as the Argus and White list.	52596
1745	Article entitled "Woodland Caribou and Forestry in Northern Ontario and Canada", dated August 1985, authored by Messrs. Darby and Duquette.	52597
1746	Three-page article entitled "Forestry and the Vertebrate Fauna", by a Mr. Ahlen.	52599
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1 ---On commencing at 9:30 a.m

2 MADAM CHAIR: Good morning. Please be  
3 seated. Good morning, Mr. Hanna.

4 JAMES F. BENDELL,  
5 JOHN MIDDLETON,  
6 ROGER SUFFLING; Resumed.

7 MR. HANNA: Good morning, Madam Chair,  
8 Mr. Martel.

9 Morning, panel.

10 CROSS-EXAMINATION BY MR. HANNA: (Cont'd)

11 Q. There were two matters that were left  
12 outstanding from yesterday, and I was wondering if you  
13 have had a chance to deal with them. The first I had  
14 on my list was the two criteria that we had spoken  
15 about that didn't appear to be in section 25, 26(1)(b),  
16 and I was wondering if, Dr. Suffling, you had found  
17 their location in FFT's terms and conditions?

18 DR. SUFFLING: A. No, we haven't found  
19 those. Two of us looked for them and there was no  
20 evidence of them in the draft FFT terms and conditions.

21 I think what has happened is that in the,  
22 you know, the rush to get everything finished, there  
23 hasn't been an accurate transcription.

24 Q. Now the second matter was I had asked  
25 if you could provide some examples of species that were

1 threatened or endangered as a result of timber  
2 management activities in the boreal forest portion of  
3 the area of the undertaking.

4 A. Yes. Now, I have looked into this  
5 very briefly. I had about half an hour in my office  
6 last night and I actually surprised myself at how much  
7 information there was, basically in a very, very small  
8 personal library.

9 And I don't deliberately keep up-to-date  
10 and comprehensive information on rare, threatened, and  
11 endangered species, so what I am giving you is very  
12 much a serendipitous selection of what's available, and  
13 I am sure one could come up with a much more  
14 comprehensive answer.

15 I found three or four relevant pieces of  
16 information. The first which I would like to bring to  
17 the Board's attention is a semi-popular leaflet  
18 produced by the Ministry of Natural Resources. It is  
19 called "Endangered Species in Ontario", and it dates  
20 from sometime around 1988, since the last reference to  
21 a date in the text is something like 1987. I am sure  
22 somebody could verify the date.

23 There are 14 species listed in the  
24 leaflet and these are the ones that are officially  
25 listed by Ontario under the Endangered Species Act. Of



1 these, three are referred to as having been or are  
2 currently being affected by logging. These are:

3 The bald eagle; that's an historical  
4 situation I would hope...

5 The small whorled pogonia, which is a  
6 southern Ontario species.

7 And the cougar which benefitted from  
8 logging but as in the case of other rare species like  
9 the wolverine is a very secretive animal in many ways  
10 and in some parts of its range does not seem to take  
11 well to road building and human intrusions. Now,  
12 that's an effect that's associated with forest  
13 harvesting. Whether or not it's severe would really  
14 depend on who travels the forest roads and what they  
15 do. If they are on the lookout to shoot cougar or trap  
16 them, then that is going to be trouble. Otherwise it  
17 may be less severe.

18 Q. Is it legal to shoot or trap cougar?

19 A. No, it is not. Not in this  
20 jurisdiction.

21 Now, in addition to that, the text also  
22 mentioned passenger pigeon, which is an extinct bird,  
23 completely extinct, and there is some implication in  
24 the literature and there is a very extensive literature  
25 on passenger pigeon that the decline is partially due

1 to forest practices. Now that became extinct in 1906,  
2 so again it's an historical situation.

3 Q. Was the passenger pigeon a boreal  
4 species?

5 A. Yes. I can say that quite  
6 definitely. There is a very definite and distinct  
7 record of passenger pigeons being cited at Osnaburgh  
8 House around the - I can't give you the exact date -  
9 but somewhere around the 1830s, and I have it in my  
10 notes at home.

11 Q. I just want to make sure I understand  
12 your evidence. You are suggesting the boreal forest  
13 was a primary habitat for passenger pigeons?

14 A. No, not in the least. The main  
15 habitat or the key species for the passenger pigeon was  
16 a chestnut, and the chestnut was a very important  
17 commercial species in East and North America in the  
18 19th and early 20th century; and the implication in the  
19 literature is not, as you rightly point out, that  
20 something was going on in the boreal forest due to the  
21 logging that caused the decline, but rather that  
22 logging in the chestnut forests was implicated in the  
23 decline.

24 Q. And the chestnut distribution in  
25 Ontario was primarily in what would be called the

1. Carolinian zone, the deciduous zone?

2 A. That's correct.

3 Q. Which is not a part of the area of  
4 the undertaking?

5 A. That's correct.

6 Q. The second information source is from  
7 the Ontario Fish and Wildlife Review, Volume 16, No. 4,  
8 1977, a special edition on endangered species. It  
9 covers much the same ground in terms of species and  
10 really adds to the statements that I have just made.

11 The third source is a leaflet entitled  
12 "Canadian Endangered Species, 1990". This was produced  
13 co-operatively by Environment Canada, The Canadian  
14 Wildlife Service, specifically, Canadian Sportsmen  
15 Shows, World Wildlife Fund, and Petro-Canada. I have a  
16 photocopy of it here.

17 It lists 195 taxa. And when a biologist  
18 says "taxa", what they mean is some kind of natural  
19 grouping; and for our purposes, that's mostly species  
20 here, but there are a few sub-species.

21 These are listed in a tabular form under  
22 headings of "Extinct" or "Extipated", which means  
23 locally extinct, extinct in this country, "Endangered",  
24 "Threatened", "Vulnerable", "Delisted" and  
25 "Downlisted", those are species that were formerly at



1 risk but have been upgraded to a more favourable  
2 status.

3 So I took the information from this  
4 leaflet and I integrated it with printed sources that I  
5 have come up with and with a little bit of memory from  
6 things that I have seen over the years, and came up  
7 with this summary table.

8 You have 195 species, mainly species,  
9 some sub-species, that are listed as rare, threatened  
10 or endangered. And if you will recall, Madam Chair,  
11 the "Threatened" label is now being changed to  
12 "Vulnerable", so we have to read those as the same  
13 category.

14 Now, of these taxa, the following numbers  
15 are those that are listed somewhere as having been  
16 affected by forestry. There is one extinct species,  
17 the passenger pigeon, which we have already alluded to.

18 In the endangered category, there are  
19 eight in Canada; of these, seven are found in Ontario  
20 and five are found in Northern Ontario.

21 Similarly with the threatened and  
22 vulnerable categories, you have in Northern Ontario a  
23 total of five species, four and one, that have been  
24 affected by forestry practices. So their status is in  
25 some way connected to that.

1                   So if we summarize this, we find that in  
2           total there are 19 species, almost exactly 10 per cent,  
3           that I personally know or I could find literature last  
4           night that suggested that these had been affected by  
5           forestry.

6                   This number for Canada and the other two  
7           beside it are on the low side because there were a  
8           number of species like bats where they were listed on  
9           the table but I don't know enough about bats to say  
10          whether they are being affected by forestry. They  
11          might be species that need snags or something like  
12          this, and I just don't know one way or the other. So  
13          19 is a minimum and similarly with 16 and 11.

14                   So reading across here, we find for the  
15          area of the undertaking that at least 11 species that  
16          are officially listed as rare, threatened, or  
17          endangered are being affected in some part of their  
18          range by forestry.

19                   MR. HANNA: Madam Chair, we should  
20          probably mark that as an exhibit if it is acceptable to  
21          the Board.

22                   MADAM CHAIR: Yes. And let's look at  
23          those pamphlets that Dr. Suffling referred to as well.

24                   MR. LINDGREN: Madam Chair, we will  
25          arrange to make -- these are the only copies that Dr.

1 Suffling has, so I will arrange to make copies as soon  
2 as possible.

3 The first one that was referred to is  
4 Endangered Species in Ontario, an MNR publication dated  
5 1988, and I suggest that that be marked as the next  
6 exhibit.

7 MADAM CHAIR: That will be Exhibit 1740.

8 ---EXHIBIT NO. 1740: MNR publication entitled  
9 "Endangered Species in Ontario".

10 MADAM CHAIR: And the second pamphlet,  
11 Mr. Lindgren?

12 MR. LINDGREN: The second pamphlet, Madam  
13 Chair, is entitled "Ontario Fish and Wildlife Review",  
14 Volume 16, No. 4, and it's dated 1977.

15 MADAM CHAIR: That will be Exhibit 1741.

16 ---EXHIBIT NO. 1741: Pamphlet entitled "Ontario Fish  
17 and Wildlife Review", Volume 16, No. 4,  
dated 1977.

18 MR. LINDGREN: And the third document is  
19 entitled "Canadian Endangered Species, 1990"; and as  
20 Dr. Suffling pointed out, it is a joint publication  
21 from Environment Canada, the Canadian Wildlife Service,  
22 Canadian National Sportsmen Shows, World Wildlife Fund,  
23 and Petro-Canada.

24 MADAM CHAIR: Thank you. That will be  
25 Exhibit 1742.



1 ---EXHIBIT NO. 1742: Publication entitled "Canadian  
2 Endangered Species, 1990".

3 MADAM CHAIR: And the overhead will be  
4 Exhibit 1743. And the title of the overhead is the  
5 number of taxa affected by forestry.

6 DR. SUFFLING: Madam Chair, these are  
7 only the rare, threatened, endangered species, not the  
8 total number of taxa involved.

9 MADAM CHAIR: The title for Exhibit 1743  
10 will be the number of taxa of rare, threatened,  
11 or endangered species that are affected by forestry.

12 ---EXHIBIT NO. 1743: Number of taxa of rare,  
13 threatened, or endangered species that  
14 are affected by forestry.

15 DR. SUFFLING: May I just add to the  
16 answer that I was giving because I have some other  
17 information here.

18 MR. HANNA: Yes.

19 DR. SUFFLING: Moving out of the  
20 categories of rare, threatened, and endangered as  
21 defined by the province and in the so-called red books  
22 which applies to this RTE list, there is another  
23 listing that has been developed which is specific to  
24 plants, and this is a data base that's been developed  
25 by two researchers in the National Library in Ottawa,  
and their names are Argus and White, so the list is

1 commonly referred to Argus and White's list.

2 It is produced provincially; that is to  
3 say, each province and territory make a separate list.  
4 And at great personal suffering to myself, I lugged  
5 this in from Kitchener this morning, and it is the list  
6 for Ontario for rare plants.

7 Now, as will no doubt be pointed out,  
8 rarity is not the same as being endangered or  
9 threatened, so there is no judgment here as to why  
10 these plants are rare.

11 The point of this is that in the vast  
12 majority of cases, at each page on here represents one  
13 species. There is no information at all about whether  
14 these species are being affected by forestry one way or  
15 the other. There are some individual species where I  
16 know this to be the case.

17 Now one, just as a for instance, is a  
18 species of thistle called *circium pitcheri*, which is  
19 found only in the Great Lakes basin and is particular  
20 to sand dunes. Reforestation of sand dunes has had a  
21 particular effect on that species.

22 Similarly, just as a second individual  
23 example, there is a species of *rhexia*, which is a plant  
24 of shorelines and it relies particularly on fluctuating  
25 water levels. The provision of dams for log driving

1 has caused the decline of that species and a number of  
2 others like it.

3 So, what I am really pointing out here is  
4 that in terms of plants, we have an enormous gap in  
5 knowledge and a sort of tip-of-the-iceberg situation  
6 where we know of a few species but we cannot talk about  
7 the others authoritatively.

8 Two last sources. One concerns a  
9 specific species that is of some concern in Ontario as  
10 I am sure the Ontario Federation of Anglers and Hunters  
11 will no doubt concur. This is the woodland caribou.

12 I draw your attention, Madam Chair, to a  
13 particular paper entitled "Woodland Caribou and  
14 Forestry in Northern Ontario, Canada". It's by Darby  
15 and Duquette, and they were -- Darby, I believe, was  
16 with the Ontario Ministry of Natural Resources, and  
17 Lorre Duquette was working for a consulting company at  
18 the time. These are listed on the title page.

19 And if I may, I would just read a part of  
20 the abstract:

21 Expansion of logging in remote parts  
22 of Ontario's boreal forest has created  
23 demand for techniques to mitigate the  
24 effects of timber harvest on woodland  
25 caribou. Caribou in boreal forest prefer

1 mature to over-mature conifers  
2 interspersed with open muskegs. Conflict  
3 arises in meeting the needs of both  
4 caribou and forestry.

5 Four interactions of caribou and  
6 forestry occurring in Ontario since 1968  
7 are reviewed.

8 These were individual cases of logging activity.

9 In two cases, caribou disappeared when  
10 exposed to widespread cutting of mature  
11 and over-mature conifer and increased  
12 moose or deer densities. Increased wolf  
13 predation of caribou may have occurred.

14 In other cases, the partial  
15 displacement of caribou resulted when a  
16 peripheral portion of winter range was  
17 cut. In one case, wolf predation  
18 probably did not increase; in the other,  
19 it may have. In all cases there is no  
20 evidence of human harvesting.

21 At present, timber harvest is proposed  
22 in several areas of caribou range.

23 This is a 1985 paper.

24 The literature plus experience in  
25 Ontario suggests the following mitigative



1 techniques...

2 And it goes on to discuss those in some detail.

3 So there is concrete evidence there of a  
4 decline in caribou due to forestry practices.

5 MR. LINDGREN: I believe that should be  
6 marked as an exhibit as well, Madam Chair.

7 MADAM CHAIR: And what about the binder  
8 on the Argus and White's list? Does anyone want  
9 something out of that made an exhibit?

10 MR. LINDGREN: There has been extensive  
11 reference to this binder previously in this hearing. I  
12 am not sure if the binder itself has already been  
13 marked and I'm --

14 MADAM CHAIR: Excuse me.

15 Mr. Hanna, in your case, will you be  
16 referring to this material?

17 MR. HANNA: We certainly would be using  
18 and certainly are endorsing what Dr. Middleton has said  
19 that this is a useful information source; but whether  
20 or not it has to be entered as an exhibit, I certainly  
21 could never see using it in argument. If you want to  
22 put the table of contents in and something of that  
23 nature, that would be fine. From my point of view,  
24 that would be all that I would need.

25 MR. LINDGREN: The other point that I

1 would make, Madam Chair, is that I believe the summary  
2 list of this document was provided almost two years ago  
3 to us through an interrogatory. I believe it was an  
4 attempt to list the 155 species of rare plants that  
5 exist within the area of the undertaking. I think that  
6 as an exhibit, perhaps that might suffice without  
7 marking this entire document as an exhibit.

8 MADAM CHAIR: Why don't we mark the table  
9 of contents as Mr. Hanna has suggested. That will be  
10 helpful to the Board to keep in mind the source.

11 MS. BLASTORAH: Mrs. Koven, perhaps it  
12 would be helpful also if we had - I don't know if there  
13 is an introduction - if there is any introduction sort  
14 of explaining definitions or what the purpose of the  
15 book is. That kind of thing might be more instructive  
16 than just the table of contents.

17 DR. SUFFLING: Madam Chair, there is  
18 about a six-page introduction--

19 MS. BLASTORAH: Yes, something brief like  
20 that could be --

21 DR. SUFFLING: --which is quite useful.  
22 And if I could make a suggestion that you  
23 perhaps include one sample page of a randomly selected  
24 page, that would give you an idea of the information.

25 MADAM CHAIR: All right. Exhibit 1744

1 will be excerpted pages from -- how do you describe  
2 this Argus and White list?

3 MR. LINDGREN: It's entitled "Atlas of  
4 the Rare Vascular Plants of Ontario" and it is dated  
5 1982 to '87, and it's prepared by George Argus,  
6 Kathleen Pryer, David White and Catherine Keddy,  
7 K-e-d-d-y.

8 MADAM CHAIR: And we will excerpt the  
9 six-page introduction, the table of contents, and a  
10 sample sheet--

11 MR. LINDGREN: Yes.

12 MADAM CHAIR: --for one species.

13 ---EXHIBIT NO. 1744: The six-page introduction, the  
14 table of contents, and a sample sheet for  
15 one species from the Atlas of the Rare  
16 Vascular Plants of Ontario, commonly  
17 known as the Argus and White list.

18 MR. LINDGREN: The other document that  
19 Dr. Suffling referred to is an article entitled  
20 "Woodland Caribou and Forestry in Northern Ontario and  
21 Canada". It is dated August 1985. And the authors are  
22 Mr. Darby and Mr. Duquette, D-u-q-u-e-t-t-e, and we  
23 will undertake to provide copies of this document.

24 MADAM CHAIR: Thank you, Mr. Lindgren.  
25 Was the title of that: Woodland Caribou and Forestry  
in Canada?

MR. LINDGREN: In Northern Ontario and

1 Canada.

2 MADAM CHAIR: That will be Exhibit 1745.

3 ---EXHIBIT NO. 1745: Article entitled "Woodland  
4 Caribou and Forestry in Northern Ontario  
5 and Canada", dated August 1985, authored  
6 by Messrs. Darby and Duquette.

6 DR. SUFFLING: The last information which  
7 I have, Madam Chair, is a paper in a monograph or book  
8 entitled "Man and the Boreal Forest" by Tamm, and there  
9 is an article in here by a gentleman - I presume it is  
10 a gentleman; I am not quite sure - called Ahlen from  
11 Sweden. And it is entitled "Forestry and the  
12 Vertebrate Fauna", and I will read the very short  
13 abstract to you:

14 The effects of forestry on the  
15 vertebrate fauna in Sweden are discussed  
16 with regard to types of forestry/wildlife  
17 interactions and a selection of  
18 scientific approaches to the problems.  
19 I am skipping a little bit here.

20 A limited number of animal and bird  
21 species have increased mainly because of  
22 increased clearcut areas. A larger  
23 number of birds, a few mammals, two  
24 species of reptiles, and at least two  
25 species of amphibians are unfavourably



1 affected or endangered by forestry mainly  
2 as a result of destruction of specific  
3 habitats.

4 Now, the point about raising a Swedish  
5 example is that many of the species, if not the  
6 majority, are of course different from the Canadian  
7 ones. But biology being what it is or ecology being  
8 what it is, the species that live in the Swedish forest  
9 are in most cases very closely paired with Canadian  
10 ones.

11 So that for instance you have species of  
12 owls called strix here and you have the same genus,  
13 very, very slightly different species, doing the same  
14 job in Sweden. And the parallels are very, very close  
15 as Dr. Bendell, I am sure, will point out.

16 And so the text of this article is  
17 entirely appropos and appropriate to a Northern Ontario  
18 situation. One has to make a few caveats concerning  
19 different land uses but by and large it's a very  
20 parallel situation.

21 MR. LINDGREN: We will undertake to  
22 provide copies of this article. And as Dr. Suffling  
23 has indicated, it is entitled "Forestry and the  
24 Vertebrate Fauna", by a Mr. Ahlen, A-h-l-e-n, and it  
25 appears in a publication entitled "Man and the Boreal

1 Forest", edited by C.O. Tamm, T-a-m-m. And it is dated  
2 1976.

3 MADAM CHAIR: How many pages is that  
4 article, Mr. Lindgren?

5 MR. LINDGREN: It is three pages, Madam  
6 Chair.

7 MADAM CHAIR: Thank you. That will be  
8 Exhibit 1746.

9 ---EXHIBIT NO. 1746: Three-page article entitled  
10 "Forestry and the Vertebrate Fauna", by a  
Mr. Ahlen.

11 DR. SUFFLING: That concludes what I have  
12 to say about rare and endangered species.

13 DR. BENDELL: May I also respond to that  
14 question, Mr. Hanna?

15 MR. HANNA: Certainly.

16 DR. BENDELL: Madam Chair?

17 MADAM CHAIR: Yes, Dr. Bendell.

18 DR. BENDELL: Because we are talking  
19 about species and I find that very exciting. And what  
20 I did and complement Dr. Suffling on what he has done,  
21 I tried to be a bit more restrictive in my looking at  
22 the question. And I have here a title called "Some  
23 Wildlife Possibly Impacted Negatively by Logging  
24 Practices in Ontario".

25 I do think it's important to mention

1 Ontario generally, and I know that we want to talk  
2 about boreal species and I will mention that as I go  
3 along. I think we should put the extinct ones on the  
4 board again: the passenger pigeon, the wild turkey,  
5 the timber rattlesnake, and I would also say the Lake  
6 Ontario Atlantic salmon. Now all of those were  
7 probably because of Great Lake-St. Lawrence and  
8 Southern hardwood/ Carolinian forest logging practices,  
9 and they don't, as you say, directly address the  
10 boreal.

11 Then I would move on to extirpated, rare  
12 threatened, endangered, vulnerable, greatly reduced  
13 species, whatever you want to call them. And I list  
14 them as birds and again I would say kirtland's warbler  
15 and the bald eagle, and both of those are boreal.

16 But then I would also say a longer list  
17 of course includes those in the southern forests:  
18 that's the hooded warbler, the prothonotary warbler,  
19 the Sistrerulean warbler, the Louisiana water thrush, and  
20 the red-shouldered hawk.

21 And then amongst the mammals, again the  
22 woodland caribou. And I would put in wapiti or our  
23 elk, wapiti or native elk, and our cougar. Now of  
24 those I think two, perhaps all three of them, are  
25 qualified as boreal species.

1                   And then amongst the invertebrates, I've  
2 mentioned the West Virginia white butterfly, but that  
3 is a hardwood species, but I think Great Lakes-St.  
4 Lawrence, so that is in the area of the undertaking.

5                   Then I have a list of plants and herbs.  
6 The plants divide quickly into trees and herbs or  
7 flower-like plants, and virtually all of these are  
8 southern, but I think they are worth mentioning.

9                   Now first of all the trees, the blue ash,  
10 the Kentucky coffee tree, the red mulberry, the black  
11 gum, the tulip tree, the sweet pig nut hickory, the big  
12 shell bark hickory, and the large magnolia.

13                  And amongst the herbs, the green dragon;  
14 and we have a number of a pogonias, the nodding, the  
15 large whorled, the small whorled pogonia; putty root;  
16 the dwarf iris; wild rye grass and wild rye, both of  
17 those are boreal amongst this list. So, those are the  
18 only ones that we can pull out of that for the area of  
19 immediate focus. Swamp saxsafrage and then the nodding  
20 trillium. It is rather sad that one of our aspects of  
21 our provincial emblem is actually on this list of -- in  
22 poor shape.

23                  Now, there's the way I would look at the  
24 list. I note as Professor Suffling says, we could only  
25 make a short beginning here on many of the plants that



1 might be mentioned. And against that, I would make the  
2 comment that we have one provincial botanist, one  
3 provincial botanist to help in this inventory.

4 Now that also leads me --

5 MADAM CHAIR: Excuse me, Dr. Bendell. Do  
6 you mean one botanist who works for the Ministry of  
7 Natural Resources?

8 DR. BENDELL: That's right. Designated  
9 in that sense that is indeed responsible for all the  
10 plants of Ontario versus things like special plants and  
11 so on and so forth that have, you know, immediate  
12 economic or whatever interest.

13 Now I think it's also germane not only to  
14 talk about what we think is happening here in these  
15 lists but also what's going on. And this again is what  
16 I consider important to know what our species are  
17 doing. This relates to this idea of inventory.

18 I have some data from the Long Point Bird  
19 Observatory which talks about what is happening to some  
20 of our birds, which again come back to some other  
21 points of view.

22 I don't think looking at the moose or  
23 even in our own case at the moment from landscape  
24 analysis would have told us this, what I think is very  
25 important information. And in this list I would call

1 attention to the veery, the Swainson's thrush, the  
2 Nashville warbler, the ovenbird, the northern  
3 waterthrush, and the white-throated sparrow, especially  
4 the white-throated sparrow, which is one of the  
5 flagship song birds of our boreal forest.

6 Now all these species are in decline and  
7 they have been declining over the last almost 20 years.  
8 Now they are not as yet recognized on these lists but  
9 things are going on. And I think that understanding  
10 what is happening on the ground is very important for  
11 this kind of appreciation and whatever reaction we  
12 might take to it.

13 MADAM CHAIR: Excuse me, Dr. Bendell.  
14 The Board has some evidence before it about the  
15 observations done at the...

16 DR. BENDELL: LPBO?

17 MADAM CHAIR: Yes.

18 And is it your view that in fact this is  
19 not a cyclical observation on these bird populations.  
20 We've had explained to us how populations can be  
21 monitored over time or do you think that this is a  
22 permanent decline? Or we don't know?

23 DR. BENDELL: It quite well could be a  
24 so-called natural phenomenon, but we just don't know.  
25 And I think we have to begin with what's happening and

1 then try to figure out the causes.

2 Our only point is that these forms,  
3 important birds are in long-term decline and they are  
4 all boreal species from the boreal forest.

5 And then I would like to wrap this up if  
6 I can with an overhead and try to put things into kind  
7 of of historical perspective I have about issues. And  
8 I think this is what it's all about. This is a kind of  
9 target and I think our target really is the wildlife,  
10 all these wild organisms.

11 And then we begin then with our  
12 inventories; and then once we have seen where we stand  
13 and what we want, we go to habitat spot analysis, say,  
14 to make sure our inventory is in good shape. We go to  
15 excess and supply analysis and we look at the  
16 environment, of course, then to look after our  
17 inventory or our wildlife species.

18 Then of course that all very much relates  
19 to people and how we get sustained use from our  
20 wildlife in the broadest sense and that of course then  
21 comes back to the analysis of our wildlife, the goose  
22 that lays the golden egg, and that of course is the  
23 successful sustained use. Thank you.

24 And I am delighted to enter that as an  
25 exhibit if you wish. (Laughter)

1 MADAM CHAIR: Do we want this overhead  
2 entered as an exhibit?

3 MR. MARTEL: May as well.

4 MADAM CHAIR: All right. That will be  
5 Exhibit 1747.

6 Your goose looks like the duck in the  
7 Drabble cartoon.

8 DR. BENDELL: It could be a duck, too. I  
9 just want to make the point that it's an animal out  
10 there or a plant trying to make a life in the  
11 environment.

12 MADAM CHAIR: And what will we call this?

13 MR. LINDGREN: What would you call this?

14 DR. BENDELL: Overview of my perception  
15 of the world. (Laughter)

16 ---EXHIBIT NO. 1747: Overhead depicting Dr. Bendell's  
17 "perception of the world".

18 MR. HANNA: Q. Are you finished panel?

19 DR. BENDELL: A. Thank you.

20 MADAM CHAIR: If this keeps up, Mr.  
21 Hanna, you only have time for one more question.  
22 (Laughter)

23 MR. FREIDIN: Madam Chair, I just flashed  
24 this to Mr. Hanna.

25 MS. BLASTORAH: That's going to look very



1 odd on the record. (Laughter)

2 ---Off the record discussion.

3 MR. HANNA: Q. Dr. Suffling, I would  
4 like to go back to Exhibit 1743. Can you provide for  
5 me what constitutes the five endangered species that  
6 are affected by forestry in the boreal forest zone?

7 DR. SUFFLING: A. Working from the  
8 Ontario list, the species that came up were bald  
9 eagle -- you are talking strictly in the undertaking,  
10 right?

11 Q. You had a table that showed 5, 1, and  
12 4 and I want to know what 5, 1, and 4 represent for the  
13 Northern Ontario portion of Ontario.

14 A. What that meant was -- and let's take  
15 an individual example.

16 Q. I just want to know the species.  
17 Just tell me what those species are. That's all I  
18 want.

19 A. So we go to the World Wildlife list.  
20 And endangered, that would be wolverine,  
21 cougar -- Eastern cougar, Kirtland's warbler, aurora  
22 trout because it's in a secondary sense affected by  
23 road building. That's your four for Northern Ontario.

24 The threatened, woodland caribou, and I  
25 did not include pitcher's thistle there in that summary

1 list because it is a very limited distribution in  
2 Northern Ontario. I know that it has been affected by  
3 forestry but I don't know that forestry in Northern  
4 Ontario has affected pitcher's thistle in Northern  
5 Ontario one way or the other. Okay? So I was  
6 conservative there and left that on.

7 Then we go to vulnerable. We have great  
8 gray owl, red-shouldered hawk, bald eagle, I believe --

9 Q. I'm sorry, that was...?

10 A. Bald eagle. And then there is one  
11 other which I have lost.

12 So if you want to be conservative, we  
13 will call that three. There may be a fourth one.

14 Q. Well, if there is a fourth, I would  
15 like to know what it is.

16 A. I can't lay hands on it just at the  
17 moment.

18 MR. LINDGREN: Perhaps Dr. Suffling can  
19 find it at the break.

20 MADAM CHAIR: Dr. Suffling, did you count  
21 bald eagle twice?

22 DR. SUFFLING: I don't think so.

23 MADAM CHAIR: I have it down in the first  
24 category as well.

25 MR. MARTEL: What's your first category

1 then?

2 DR. SUFFLING: This was endangered.

3 MR. MARTEL: Right.

4 DR. SUFFLING: And that had wolverine,  
5 cougar, Kirtland's warbler, aurora trout.

6 MADAM CHAIR: I think you mentioned bald  
7 eagle as the first one in that list, so I --

8 MR. LINDGREN: I think he did start by  
9 listing bald eagle but then changed it to endangered,  
10 threatened bald eagle.

11 MR. HANNA: Q. How many endangered do we  
12 have? I had five endangered and one was the bald  
13 eagle, so I just want to make sure I've got the numbers  
14 right.

15 DR. SUFFLING: A. I see what I have  
16 done. I have added in the bald eagle from the Ontario  
17 list, I think. You will have to excuse me on this but  
18 it was done at some considerable haste.

19 All right. Call it four for northern  
20 Ontario.

21 Q. In the endangered?

22 A. In the endangered category strictly  
23 for the World Wildlife list. Okay.

24 Then there is one -- on the threatened, I  
25 had one, woodland caribou, with possibility of

1 pitcher's thistle but I left it off because I didn't  
2 want to be nitpicky.

3 And then on the vulnerable category, we  
4 have great gray owl and red-shouldered hawk. I gave  
5 you a third one.

6 MADAM CHAIR: Bald eagle.

7 DR. SUFFLING: Bald eagle.

8 MR. HANNA: Q. Now I want to make sure I  
9 understand the basis upon which you made these  
10 determinations that they are affected by forestry. I  
11 take it that you are suggesting that by being affected  
12 by forestry, the reason for their current status is  
13 because of forestry activities, timber management  
14 activities?

15 DR. SUFFLING: A. Their current status  
16 in Canada relates in part or in whole to forestry  
17 activities. So if you take a species like the aurora  
18 trout, the primary cause of decline is in all  
19 probability acid precipitation. A secondary cause is  
20 reckoned to be road building which has allowed more  
21 fishermen to get to the population. Initially. Not  
22 now because it is on the list. But initially it was.

23 Now in other cases there is a well-known  
24 association in the literature. You take the wolverine  
25 for instance. It is a species that just doesn't



1 tolerate disturbance. It's not that it requires mature  
2 forest because we know that you can find that on the  
3 tundra, but it just doesn't seem to like being around  
4 people, for whatever reasons, because it is hunted or  
5 disturbed.

6 Q. Regardless of whether it's forestry  
7 or whether it's whatever activity?

8 A. Yes. But the point about forest  
9 activities is that they involve a lot of road building,  
10 road building brings people, and people cause the  
11 decline.

12 So, you know, to be absolutely fair to  
13 the forestry industry, it is very difficult in most of  
14 these cases to pin something down to one specific  
15 cause. You know, it was this chainsaw that did it.  
16 You often can't say that. It is a combination of human  
17 actions and behaviour that are associated with the  
18 forest industry in some way.

19 Q. All right. The Kirtland's warbler.  
20 Can you explain to me how you arrived at that  
21 conclusion.

22 A. The Kirtland's warbler is known to  
23 have very specific habitat requirements.

24 Q. And those are?

25 A. It lives in fairly open jack pine

1 habitat between two and six metres high, very specific.  
2 It doesn't like to have a ground situation because it's  
3 flooded in the spring. And it won't nest if the jack  
4 pine got sufficiently dense or large that the lower  
5 branches are dying through shading.

6 As a result of fire control, the total  
7 amount of that kind of habitat has decreased over the  
8 years and so it is widely suspected by people in the  
9 know, people who have done a lot of work on this, that  
10 fire control has something to do with the current  
11 rarity of Kirtland's warbler. It was a lot more common  
12 in the 1880s to early 1900s and that's immediately  
13 after a period of quite intense fire activity  
14 throughout Northern Ontario and Michigan and so on.

15 Q. Dr. Suffling, are you --

16 A. Now there is one other factor that we  
17 should mention here and that is this second hypothesis  
18 that is raised by ornithologists concerning the rarity  
19 of Kirtland's warbler, and that concerns a bird called  
20 the cowbird which is very common. And we often see it  
21 feeding in urban areas.

22 The cowbird is the one common bird in  
23 Ontario whose nest has never been found. And the  
24 reason is because the cowbird is an egg parasite. It  
25 goes around laying its eggs in other birds' nests. And

1 to put it bluntly, the Kirtland's warbler is a real  
2 sucker when it comes to this game.

3 If the cowbirds are near the Kirtland's  
4 warbler, they will use Kirtland's warbler nests; and  
5 the sucess of Kirtland's warbler has been shown to go  
6 down as a result.

7 Now, we also know that cowbirds require a  
8 certain amount of open habitat and that habitat  
9 fragmentation allows the cowbird into the Kirtland's  
10 warbler nesting area and then the decline tends to  
11 occur because of that.

12 Q. What was the historical breeding  
13 range of the Kirtland's warbler in Ontario?

14 A. The historical breeding range is  
15 around, mostly around Petawawa. In Ontario.

16 Q. And the last sighting of Kirtland's  
17 warblers in Petawawa, was it in a natural stand or in a  
18 reforested stand?

19 A. I can't tell you offhand, but I  
20 believe it was a reforested stand.

21 Q. Now in terms of the pitcher's  
22 thistle, *cirsium pitcheri*, that is known from sand dune  
23 habitats?

24 A. That's correct.

25 Q. And those are generally bear of

1 trees? That's the type of habitat it typically  
2 chooses?

3 A. In the habitat where the thistle  
4 occurs, yes, it is bare of trees.

5 Q. So your concern with the pitcher's  
6 thistle would be reforestation of areas that are  
7 currently sand dunes?

8 A. Yes, that has been the concern in  
9 several areas where red pine and white pine and maybe  
10 jack pine, I am not sure --

11 Q. Do you know of any cases in the area  
12 of the undertaking where that type of activity has led  
13 to problems with this plant?

14 A. It's very difficult to say. The most  
15 northern occurrence of pitcher's thistle is in Pukaskwa  
16 National Park on a sand dune system. Just down the  
17 coast there is a provincial park called Neys Provincial  
18 Park, and it's just the kind of habitat where you would  
19 find pitcher's thistle, except the whole, pretty well  
20 the whole of the sand dune area that might have been  
21 amenable to produce thistle was long ago planted with  
22 red pines.

23 MR. CASSIDY: I'm sorry, with what? The  
24 last word?

25 DR. SUFFLING: The habitat that might



1 have been amenable, might have been suitable for  
2 pitcher's thistle, where it may well --

3 MR. CASSIDY: I just missed the last  
4 word.

5 DR. SUFFLING: Where it may well have  
6 occurred has long ago been planted with red pine.

7 MR. HANNA: Q. Now I am interested in  
8 knowing in terms of -- sorry, I didn't deal with  
9 rhexia. Rhexia is an Atlantic disjunct meaning a plant  
10 that's a remnant from an Atlantic coastal plain  
11 environment; is that correct?

12 DR. SUFFLING: A. That's the feeling of  
13 people who have studied it, yes.

14 Q. And what's its distribution in  
15 Ontario?

16 A. Rhexia is mainly -- the main  
17 distribution is around Matchedash Lake and areas up  
18 in... Where would that be? Near Orillia.

19 Q. And is Matchedash Lake, the water  
20 levels there regulated for forestry purposes?

21 A. In Matchedash Lake itself, the  
22 regulation was done to improve fisheries. But in some  
23 of the other lakes where it occurs, it was done years  
24 ago for log driving.

25 Q. Now in terms of these list of species

1 that you have provided, I am interested in knowing how  
2 your ecosystem supply analysis approach, your landscape  
3 approach, would deal with these.

4 A. If you would turn, I believe it's to  
5 condition 19(1), but I will have to check it. That was  
6 92...

7 DR. MIDDLETON: In the terms and  
8 conditions.

9 DR. SUFFLING: No, I have got the wrong  
10 place.

11 MR. HANNA: Q. I wasn't necessarily  
12 talking about FFT's terms and conditions. I was  
13 talking about your evidence and what you have come  
14 forward with in terms of the landscape analysis or  
15 landscape management approach, and I'm interested in  
16 knowing how it would cope with or how it would address  
17 and resolve the types of issues that you have raised  
18 here.

19 A. It depends entirely on the species.  
20 Let me elaborate on that. When it comes to the  
21 Kirtland's warbler with a very specific requirement for  
22 a certain species of forestry and a certain specific  
23 size requirement. The provision of ecosystems of that  
24 size in the context of a continuing rotation of tree  
25 growth is something that's absolutely amenable to the

1 landscape approach. So is the problem of cowbird  
2 invasions because of habitat fragmentation. Okay. so  
3 both of those approaches are amenable -- both of those  
4 problems are amenable to that approach.

5 When you get to *cirsium pitcheri*, for  
6 instance, again, you have a specific habitat  
7 requirement; and if that habitat is in the landscape,  
8 then you should be ensuring its perpetuation.

9 Q. Can we deal with the --

10 A. With some of the others, maybe the  
11 aurora trout, if you will allow it as an example albeit  
12 an historical one where road building has had some  
13 effect, then presumably something other than the  
14 landscape approach to ecosystems is needed. You would  
15 be looking at road networks, road access, some other  
16 mechanism.

17 Q. The suggestion in what you have just  
18 said in terms of Kirtland's warbler is that the habitat  
19 conditions have changed such that there is not adequate  
20 habitat for Kirtland's warbler in Ontario at the  
21 present time; is that your evidence?

22 A. I don't know that. There are two  
23 problems with -- not with the question, but in my mind  
24 with the question. One is: What do you mean by  
25 habitat? What do you mean by the environment the bird

1 is in? If you are including this relationship with the  
2 cowbird, then there is something wrong with the  
3 habitat, yes. The cowbird is part of that animal's  
4 environment.

5 Q. But I am saying to you: If we had  
6 adopted today or we had adopted 30 years ago the  
7 landscape management approach that you are advocating  
8 at this point, in Ontario, that we would have  
9 Kirtland's warblers in the province?

10 A. Well, obviously I can't guarantee  
11 that.

12 Q. But that's your expectation?

13 A. I would think that if you had an area  
14 where Kirtland's warblers had been observed, as they  
15 have been in Petawawa, males seen, which indicates that  
16 they are trying to breed or ready to breed, then if you  
17 ensured the right habitat conditions you would at least  
18 be sure that it was not habitat which prevented the  
19 breeding. That didn't occur. It would have to be  
20 something else, wouldn't it?

21 Q. Dr. Bendell, are you aware of surveys  
22 undertaken by the Royal Ontario Museum in the last ten  
23 years looking at suitable habitat for Kirtland's  
24 warblers throughout the area of their historical  
25 breeding range and finding great areas of the habitat



1       being vacant?

2                       DR. BENDELL: A. I am aware of surveys,  
3       yes. And I don't know whether I would agree with the  
4       great areas of habitat vacant because what comes to  
5       mind in my thinking is that relatively large areas of  
6       burned jack pine, early stages of jack pine recovering  
7       from burning are required and where the jack pine as a  
8       natural regen are rather clumpy over the ground.

9                       And thinking about what we do of course  
10       is that after burning we scarify and restore, replant  
11       jack pine in a relatively empty understorey because of  
12       the scarification after the burn, cleaning the ground  
13       as it were, and then the trees are planted at the even  
14       age and evenly spaced amongst one other, so that may be  
15       part I think of the story.

16                      In a sense I am agreeing that it's  
17       (inaudible). I would say that, that perhaps if we had  
18       this appropriate habitat in places, that we would have  
19       Kirtland's warblers over their old distribution today  
20       and that would be around Pointe au Baril, the North  
21       Shore of Lake Superior, and so on.

22                      Q. I was going to talk about au Baril  
23       because that's classic Kirtland's warbler's habitat  
24       historically, isn't it, that area?

25                      A. Well, I don't know if we know enough

1 about -- you know, our records are that good that we  
2 can talk about classic. That's I mean my first  
3 response. And I am not an expert on Kirtland's  
4 warblers.

5 In terms of sightings, most of them are  
6 indeed in the Ottawa valley and that could be a  
7 consequence of a number of things preserving them. And  
8 that's again that comes back to this problem of what we  
9 are talking about, what's on the land is what we have  
10 been able to sample.

11 Q. Is it your experience that in the  
12 Pointe au Baril area that it's classic silvicultural  
13 practice to site prepare?

14 A. No. As I drive through that forest,  
15 at least as revealed by Highway 69, it's coming back  
16 more to -- at the present time, coming back more to  
17 white pine, white birch, balsam fir.

18 Q. My question wasn't that. My question  
19 was: Is it your experience in terms of silvicultural  
20 practices that the type of site preparation you have  
21 described would be used in the Point au Baril area?

22 A. No, no.

23 DR. SUFFLING: A. You can't do site  
24 preparation in that area because it's so rocky

25 Q. Because it's so rocky?

1 DR. BENDELL: A. That's right. It is  
2 not what I would consider a prime jack pine site. It  
3 doesn't compare with Pettawawa sands for example.

4 Q. Are you suggesting there aren't large  
5 jack pine regenerating stands in that area?

6 A. There are, but not relative say to  
7 the Gogama Plains, more to the Pettawawa valley.

8 Q. To summarize this: you don't have  
9 any evidence to bring forward to us at this time to  
10 suggest that there is an absence of those habitat types  
11 in Ontario at the present time and that there are  
12 habitat types that are apparently suitable from a  
13 structural point of view that are vacant?

14 A. I would say that in my experience  
15 that there are not adequate habitats available now for  
16 the Kirtland's warbler over expansive areas of jack  
17 pine because of our silvicultural treatment.

18 DR. SUFFLING: A. Can I expand on that.

19 If you take the Pointe au Baril example,  
20 most of the habitat that you will see in that area  
21 dates from a burn which occurred very shortly before I  
22 came to Canada - I don't know the year - but it was  
23 very, very young material around 1970. And that burn  
24 was a wild fire. It wasn't a prescribed fire and it  
25 didn't follow on harvesting, immediately on harvesting.

1                   So, you cannot make any kind of  
2                   suggestion there that the habitat that was created,  
3                   whether it is good for Kirtland's warbler or not, was  
4                   in any sense directly related to the forest industry or  
5                   the harvesting.

6                   Q. In terms of trying to deal with a  
7                   species like the Kirtland's warbler, would it not be  
8                   more reliable to design a habitat if you were trying to  
9                   manage for that species and you knew that it was in a  
10                  situation that habitat was a living factor, to design  
11                  the habitat specifically for it rather than to leave it  
12                  to random variation of the landscape mosaic?

13                  A. I completely agree. It's the second  
14                  phase or filter or whatever you want to call it of the  
15                  approach that is advocated by Forests for Tomorrow;  
16                  that is, to use a landscape approach throughout the  
17                  landscape. And where you have a specific species that  
18                  is of economic value or some cultural or aesthetic  
19                  conservation concern, then you can devise other rules  
20                  and procedures to cope with that.

21                  Q. Could that comment be applied to all  
22                  the species that you have listed here as being affected  
23                  by forestry?

24                  A. I am not sure about all of them.  
25                  Some of them like the wolverine or the caribou are so



1. wide ranging and so difficult to predict in their  
2 locations, that if you were to take an area and manage  
3 it specifically for those species, you would have some  
4 enormous undertaking, both in terms of the land that it  
5 might take out of production, and in terms of the,  
6 perhaps the logistics of doing it.

7 But when you look at wolverine - and I am  
8 not an expert on wolverine - but as I understand it,  
9 its habitat requirements in terms of the kind of forest  
10 it lives in are not really very special. It just  
11 doesn't like people.

12 Q. So a landscape management approach  
13 isn't going to help one way or the other?

14 A. I didn't say that.

15 Q. How does the landscape management  
16 approach deal with people --

17 DR. BENDELL: A. I would like to say  
18 that it very much could and we always talk habitat  
19 supply or ecosystem supply to providing the species we  
20 want. Fair enough.

21 But, it could be first of all that we are  
22 wrong in our diagnosis and the wolverine might be a  
23 very rare species for some quite other reason, say. In  
24 Ontario, for example, it could be related to the kind  
25 of dispersal that is coming from Manitoba.

1                   The other thought that comes to mind is  
2           that species are not immutable, and we shouldn't get  
3           the motion that the Kirtland's warbler that we have  
4           today is the Kirtland's warbler that lived 50, 60 years  
5           ago.

6                   And I think we have talked about a  
7           genetic diversity as what we have to look for and I  
8           think you will appreciate that too, so that's another  
9           kind of problem: is getting the right kind of the  
10          animal but in the species framework to fit in with the  
11          habitat supply.

12                   And a very good example that comes to my  
13          mind that may relate -- it may be what's involved here  
14          is that numerous years we have tried to introduce wild  
15          turkey to Ontario and those attempts have failed. And  
16          currently we have had a spectacular success. And I  
17          think that the consequence has been a different strain  
18          of wild turkey is what has made the difference.

19                   So I come back again that you have to  
20          look at the kind of variation in the animal as well as  
21          what habitat will provide in order to get a successful  
22          yield from the system.

23                   Q. Dr. Suffling, I would like to know  
24          how the landscape management approach would deal with  
25          the concern you have raised with wolverines.

1 DR. SUFFLING: A. Let's take my  
2 situation at the moment. I am not a wolverine expert,  
3 okay.

4 Q. Let's just take as hypothesis for  
5 your answer --

6 A. Let's take wolverine as a species as  
7 an example of the endangered species. I am not a  
8 wolverine expert and I don't have any particular,  
9 presuppositions about the habitat that wolverine  
10 requires. I understand secondhand that it is not  
11 particularly fussy, but I might be wrong.

12 Now if I am wrong, it doesn't matter so  
13 much if I follow the approach in providing all of the  
14 available kinds of ecosystem if this would help.

15 If I am right and I have some specific  
16 idea about what habitat is required, only if I am right  
17 about that idea, then some specific habitat  
18 manipulation may be beneficial. But even if I think I  
19 know what is going wrong and I do the wrong thing, I  
20 may actually harm the situation, not help it.

21 Q. In terms of caribou, are you aware  
22 that the Ministry has a policy that caribou can be a  
23 featured species in some locales?

24 A. Yes.

25 Q. And you are aware some locales are

1 being managed for caribou habitat specifically?

2 A. I am not sure what management is  
3 being done but I understand that the caribou are  
4 featured in certain areas.

5 Q. And are you suggesting that there is  
6 something wrong with that?

7 A. No.

8 Q. So that that would be also a way to  
9 deal with that specific concern to manage specifically  
10 for that species?

11 A. I have some reservations about that.  
12 I was talking to a trapper a few years ago -- and to be  
13 honest, I have never seen a woodland caribou in the  
14 wild; I have seen other kinds of caribou but not that  
15 particular kind of caribou.

16 And I said to him, 'Where would I go to  
17 see woodland caribou?' He said, 'Oh, that's very  
18 difficult.' And I say, 'Why?' He said, 'Because you  
19 find woodland caribou where you find them.' And I  
20 said, 'What do you mean?' He said, 'They turn up in  
21 the most unexpected places where you don't expect to  
22 see them and you can go where you think you are going  
23 to see them and they won't be there. They are very  
24 tricky animals.'

25 Q. I can guarantee you will see one in



1 Slate Islands.

2 A. Yes, probably.

3 Q. Well, I think that deals with the  
4 undertaking.

5 Madam Chair, my hour was starting from  
6 now. Maybe I can do it in a shorter time than that.

7 MR. MARTEL: Your mathematics may come...  
8 but I'd just ask. You said your hour starts from when?  
9 I don't know what the last hour and five minutes, whose  
10 hour that was. (Laughter)

11 MR. HANNA: No, that was an hour that I  
12 wasn't planning on, Mr. Martel, that was the --

13 MR. MARTEL: Funny mathematics, that's  
14 all.

15 MR. HANNA: I'm sorry. Simply that  
16 wasn't in my calculation.

17 MADAM CHAIR: What areas are you  
18 exploring with the questions you have left?

19 MR. HANNA: Madam Chair, I haven't dealt  
20 with Dr. Bendell on his portion of the witness  
21 statement. I don't expect that will be long. And I  
22 have, I think, two matters to deal with and Dr.  
23 Middleton will be finished.

24 MADAM CHAIR: So you expect less than an  
25 hour?

1 MR. HANNA: Yes.

2 MADAM CHAIR: Do you want to take the  
3 morning break now, Mr. Hanna?

4 MR. HANNA: Certainly. Fine.

5 ---Recess at 10:35 a.m.

6 ---On resuming at 10:55 a.m.

7 MADAM CHAIR: Please be seated.

8 Mr. Hanna.

9 MR. HANNA: Q. Dr. Middleton, can we  
10 turn to page 40 of your witness statement, please.

11 DR. MIDDLETON: A. Yes.

12 Q. When you make the statement under the  
13 sustainable landscape section, actually it carries over  
14 on to page 41, the actual part that I want to refer to,  
15 it's in the second paragraph there. You say that in  
16 the second sentence: "In the absence of explicit  
17 quantitative targets, phrases like 'as much as  
18 possible' have no operational meaning." Do you see  
19 that?

20 A. Yes, I do.

21 Q. Is it fair to say that you are of the  
22 view that phrases such as "as much as possible" must be  
23 expressed in quantitative terms to be practically  
24 implemented in timber management planning?

25 A. In the best type of system, yes.

1                   Q. Now, I understand also that you're  
2 highly supportive of the adaptive management approach  
3 that Dean Baskerville has proposed and you have spoken  
4 about that in your evidence?

5                   A. That's correct.

6                   Q. And I gather that you concur with  
7 Dean Baskerville that there is a burning need to set  
8 quantitative objectives for directing management as  
9 opposed to using constraints?

10                  A. I agree with that.

11                  MADAM CHAIR: Excuse me, Dr. Middleton.  
12 Did you mention a day or two ago about some difference  
13 of opinion you had with Dr. Baskerville?

14                  MS. BLASTORAH: I'm sorry, Mrs. Koven, I  
15 couldn't hear you back here.

16                  MADAM CHAIR: I was asking Dr. Middleton  
17 if he mentioned to us a few days ago whether he had  
18 some disagreement with Dr. Baskerville, some point of  
19 disagreement with Dr. Baskerville's proposals.

20                  DR. MIDDLETON: Not a disagreement with  
21 what he said, a slightly different perspective. Again  
22 I would distinguish between the approach, the adaptive  
23 management approach which I understand is what we are  
24 talking about here, as opposed to specific details of  
25 what this or that forest ought to look like at this and

1       that time.

2                     My understanding from reading the  
3       transcripts of when Dr. Baskerville was before this  
4       Board and some of his papers that were attached as  
5       exhibits at that time was that he was talking for the  
6       most part about timber targets.

7                     He did have comments to make about other  
8       values including wildlife. I took those examples as  
9       just that, examples, not intended to give the specific  
10      details about timber which he provided in other places,  
11      and that's why I made that caveat, that the approach  
12      for wildlife that we are talking about here is of a  
13      greater degree of specificity than were Dr.  
14      Baskerville's comments about wildlife, as I understand  
15      it.

16                    MR. HANNA: Q. Dean Baskerville has  
17      given evidence and written extensively about guidelines  
18      being a form of constraint that confounds the adaptive  
19      management approach. Would you agree with that view?

20                    DR. MIDDLETON: A. I don't disagree with  
21      it. I would have to see it more in its context to be  
22      sure I absolutely grasp the nuances of it.

23                    Q. Would you agree that from your point  
24      of view at least as a scientist that to practise the  
25      adaptive management approach that you are supportive of

1 that one needs to make local level predictions of  
2 impacts and test the consequences of actions based upon  
3 those predictions and on that basis refine our  
4 knowledge?

5 A. Yes, of two forms. Predictions in  
6 the strict scientific sense, in the sense of  
7 experiments and so on, but also, and more importantly,  
8 testing predictions in the broader sense of monitoring  
9 the effects of our plans and making use of that  
10 information as a sort of pseudo experiment.

11 Q. Yes. And in order to make that  
12 monitoring information useful, we must have initially  
13 set forth what we predicted was going to happen and use  
14 the monitoring as a basis to check that?

15 A. Quite so.

16 Q. Dr. Bendell, I finally now get a  
17 chance to talk to you about your portion of the witness  
18 statement.

19 Now, in your oral evidence I believe you  
20 indicated that you do not reject the featured species  
21 approach per se but that you feel it needs to be  
22 complemented with the landscape approach advocated by  
23 this panel?

24 DR. BENDELL: A. Right.

25 Q. Now on page 8 of the witness



1 statement, paragraph No. 2, you indicate that the  
2 hypothesis that habitat good for moose is good for  
3 other species has not been tested; correct?

4 A. Yes.

5 Q. Now is direct comparison of a  
6 hypothesis using field observations the only means to  
7 test?

8 A. No. There are a variety of tests  
9 possible.

10 Q. Would you agree that it is reasonable  
11 to test a hypothesis to take what is known about the  
12 habitat requirements for different species or groups of  
13 species and compare that against the habitat  
14 requirements of the species in question?

15 A. Yes. That's a priori -- what we  
16 would call an a priori qualitative approach to test an  
17 hypothesis. It is not a very strong test. In science  
18 and whatever we do in life, we are always looking for  
19 the crucial test, as it were, a good test.

20 Q. You mean the ideal opposed to  
21 practicable?

22 A. Well, I suppose if you mean by ideal,  
23 better, a better way to go about it. And the better  
24 way might be quite a practical method.

25 Q. Well, would you not agree that it's

1 the exception in resource management that we have  
2 adequate data to use empirical results to arrive at  
3 such conclusions as--

4 A. I wouldn't think so.

5 Q. --attempted by Baker and Euler?

6 A. No, I wouldn't think so. For  
7 example, we have much data on change of the forest. We  
8 have much data on how the moose have responded. And in  
9 my view, we are now asking what that has meant to other  
10 species of wildlife in that ecosystem, in that forest  
11 or whatever area of concern.

12 Q. My understanding of what Baker and  
13 Euler did was precisely that. They tried to take the  
14 best available information and say: What is the  
15 implications of that habitat modification in terms of  
16 300-odd other species?

17 A. Right. And a very good job,  
18 commendable. And that's exactly what I would do as a  
19 first step, and then I would design better methods  
20 which would certainly involve broader actual census on  
21 the ground.

22 And part of the problem of course is that  
23 the literature is often not representative. In other  
24 words, the kind of results you come to depends very  
25 much upon the kind of information you have in putting

1 together your story, as it were.

2 Q. I accept that as an unavoidable  
3 circumstance when you are using the literature as the  
4 basic source. But without collecting new information  
5 and undertaking the type of more extensive monitoring  
6 and research that I think you are suggesting, was there  
7 a better way to have tested the hypothesis at the  
8 present time?

9 A. I think they could have. Beyond  
10 categorizing the data in the fashion they did, they  
11 perhaps could have done some of this projecting what  
12 would have been an area under various forms of moose  
13 management rather than simply putting it into broad  
14 categories that they did, that would be one thought  
15 that would come to mind.

16 And then I think that very easily on the  
17 basis of what they had done, they could have gone into  
18 a few select spots and made a prediction from their  
19 literature review and gone to a few selected spots and  
20 checked out if indeed that was happening in the  
21 environment.

22 Q. But that would have meant collecting  
23 more data.

24 A. Yes.

25 Q. That's why I put that in as a limit.

1 But in terms of using the available  
2 information it was a reasonable approach?

3 A. I would agree with that.

4 Q. Now on page 9 --

5 A. A reasonable approach, let's put it  
6 that way, yes.

7 Q. On page 9, you make the statement in  
8 the first paragraph there that, the last sentence, that  
9 "popular wildlife species like moose may increase in  
10 abundance after logging, and logging may be falsely  
11 justified as enhancing wildlife habitat."

12 A. Yes.

13 Q. Now, could the same not be said for  
14 wild fire?

15 A. Yes, I think one could say so, that  
16 there are consequences of wild fire and they can be  
17 this way or they can be that way.

18 Q. Would this be a false basis to  
19 justify the benefits of natural fires?

20 A. I think to not give the full array of  
21 the effects of natural fire would be a distortion. If  
22 you were trying to talk about the consequence of wild  
23 fire, I think it would be a bias to emphasize only  
24 certain aspects of wild fire because there are in any  
25 action the pluses, the zeroes, and the negatives.



1 Q. I see. So the essence of the comment  
2 you are making there is simply that we must recognize  
3 that there is a range of habitat requirements for  
4 different species--

5 A. Right, right.

6 Q. --and that has when we do something  
7 has implications for all species?

8 A. That's right. And I think the idea  
9 here of course is to fix in someone's mind that  
10 wildlife equates to moose. And in a very narrow sense  
11 it does, but we must realise that wildlife is a far  
12 broader issue than one single species.

13 Q. So it would be fair to say that  
14 logging can enhance wildlife habitat for some species  
15 and it may not for others?

16 A. Yes.

17 Q. And you would like to see a balance  
18 due brought forward?

19 A. Yes, that's correct.

20 Q. Now, would you agree that in arriving  
21 at silvicultural prescriptions--

22 A. Plans, yes.

23 Q. --for an area, one needs to balance  
24 commercial logging interests versus wildlife interests?

25 A. Yes.

1 Q. Would you agree that it is also  
2 necessary to balance competing wildlife interests in  
3 arriving at silvicultural prescriptions?

4 A. Yes.

5 Q. How do you propose to balance the  
6 competing wildlife interests?

7 A. Well, again, I think we need, first  
8 of all, the kind of information that's required for  
9 that balancing process, and I think you need a fair  
10 place to table, the planning table for all stakeholder  
11 interests, and I think out of that, hopefully, we will  
12 come to a wise decision as to how we are going to get  
13 the egg from the goose.

14 Q. Now, on page 9, paragraph 4, you  
15 indicate that the habitat requirements of a number of  
16 species are not known and you make reference to some  
17 work on marten and fisher; correct?

18 A. Yes.

19 Q. Would you agree that the same  
20 argument could be made for moose that we do not have  
21 enough information in terms of their habitat  
22 requirements? We may have more but we don't have  
23 enough?

24 A. I would have to look at the moose  
25 literature and what we are trying to do with moose.

1 For our moose objectives, we may have a plethora of  
2 information, defining plethora as a sickening abundance  
3 of data. And frankly I would think that in terms of  
4 moose, we probably have quite enough for what we want  
5 to do at the present time with that species.

6 Q. So, the argument we don't have enough  
7 information regarding the habitat requirements of  
8 certainly moose and perhaps other species is somewhat  
9 of a hollow claim. In other words, we might as well  
10 use what we have and use that information as the best  
11 available and, as Dr. Middleton has agreed, collect  
12 more information as we go along.

13 A. Yes, yes.

14 Q. I would like to deal with your Gogama  
15 study area if we could. I would like to turn to page  
16 14 of the witness statement.

17 Now the hypothesis that you have put out,  
18 that you attempted to test in this study area was that  
19 if the moose habitat guidelines maintain and enhance  
20 most species of wildlife, then omitted habitat should  
21 not add to the species of wildlife and their abundance  
22 more than those habitats included; is that correct?

23 A. That's right.

24 Q. Now, if one accepts that the moose  
25 habitat guidelines deal with 70 per cent of the boreal

1 species, the vertebrate species, does it not follow  
2 then that omitted habitat should add to species of  
3 wildlife and their abundance, particularly those not  
4 directly included within the moose habitat guild of  
5 species?

6 A. Well, to talk about what I tried to  
7 do is I tried to take a landscape approach, and I  
8 simply asked if the landscape, this unit of landscape  
9 was managed for moose under this so-called ideal  
10 prescription, what would that produce as compared to a  
11 landscape managed with what was there and what these  
12 other parts of the landscape would provide that were  
13 not considered in the moose guidelines.

14 And in a sense, I looked upon this as a,  
15 I would argue, a more crucial test of the proposition  
16 that is trying to be put forward that the moose is a  
17 good featured species and looks after these 70 percent  
18 other species.

19 Q. My question was a simple one, I  
20 thought, and that is: If 70 per cent of the species  
21 are claimed to be adequately dealt with by the habitat  
22 produced by moose, if one went into the landscape, one  
23 would expect that there is going to be 30 per cent of  
24 the species that I am going to find in the other  
25 habitat types that aren't what you have called ideal



1       moose habitat?

2                           A.   Yes.

3                           Q.   So that's what you would expect to  
4       see?

5                           A.   That's right.

6                           Q.   So the fact that you find other  
7       habitats that add to species in abundance beyond those  
8       that are designated as moose habitat is not in any ways  
9       at odds with the hypothesis of the feature species  
10      approach?

11                          A.   It is at odds in terms the featured  
12      species approach is not adequate.  It does not look  
13      after other habitats and animals that are in those  
14      habitats.

15                          Q.   The 30 per cent?

16                          A.   Yes.  And also broadening it to  
17      abundance as well because, as you know, that's another  
18      aspect of the feature species approach:  it doesn't  
19      address abundance.

20                          Q.   Now in terms of what you described as  
21      ideal moose habitat in the habitat that was prescribed  
22      in the moose habitat guidelines, what part of the moose  
23      habitat guidelines were you referring to?

24                          A.   I was referring to a testimony from  
25      Dr. Euler as to what he envisions as excellent moose

1 habitat. And again what one would obtain from the  
2 guidelines, the moose guidelines.

3 Q. So are you suggesting that the  
4 hypothesis was that we would create in the area of the  
5 undertaking, the boreal portion of the undertaking, the  
6 ideal moose habitat Dr. Euler described in his  
7 testimony?

8 A. That's right.

9 Q. And that would be for the entire area  
10 of the undertaking?

11 A. Well, under that prescription.

12 Q. Yes.

13 A. And then what I attempted to do was  
14 put in what I consider a very important but missing  
15 habitat, the pines. And then by adding pines, I looked  
16 at the landscape under that prescription.

17 Q. And the conclusion you came to  
18 was...?

19 A. Well, that I got more species in  
20 greater abundance by adding a new component, a new part  
21 of the ecosystem.

22 Q. Now, are you aware of situations  
23 where dense regenerating jack pine, particularly after  
24 large fires or other types of disturbance, are major  
25 concentration areas for moose?

1                   A. That's quite possible. And indeed in  
2 this area, this is a shrub zone or a shrub habitat I  
3 talked about, one frequently sees moose in them or in  
4 that habitat.

5                   Q. In the regenerating pine and in pine,  
6 immature pine?

7                   A. No, no. In what I included as shrub.

8                   Q. Did you include regenerating pine in  
9 the shrub?

10                  A. No, I classified the shrub habitat as  
11 shrub habitat.

12                  Q. But my question was specific to dense  
13 regenerating jack pine stands.

14                  A. Well, dense regenerating jack pine  
15 stands early in succession can be quite shrubby.

16                  Q. How did you separate shrubby stands  
17 from regenerating jack pine stands?

18                  A. In my case?

19                  Q. Yes.

20                  A. Well, in the case of the burn, the  
21 predominant vegetation is not jack pine, it's deciduous  
22 broad leaf plants.

23                  Q. And what did you classify it as?

24                  A. Shrub.

25                  Q. And what did you classify as

1 regenerating jack pine?

2 A. In my case I am talking about jack  
3 pine plantations 20 years of age, 40 years of age, and  
4 so on.

5 Q. I see.

6 Now, you are aware that the Ontario  
7 Federation of Anglers and Hunters is also of the view  
8 that managing for moose alone is not adequate? And you  
9 are aware also that the Ontario Federation of Anglers  
10 and Hunters is advocating that in the boreal forest  
11 zone that pine marten be added as a featured species.

12 A. (Nodding)

13 Q. Now, if pine marten were being  
14 managed in the province at the present time as a  
15 featured species and used as another factor in deciding  
16 on habitat structures, how would this affect the  
17 conclusions you have presented in terms of the Gogama  
18 study area in your witness statement?

19 A. It would help because in my view we  
20 are going to have to expand the number of species we  
21 have to use as monitors. Not very large; I don't think  
22 it has to be much more than perhaps in the hundreds,  
23 100, 200 in total --

24 Q. Species?

25 A. Yes. And that's sprinkled through

1 the whole array of what I define as wildlife.

2 Having said that, it wouldn't make a  
3 great deal of difference to my calculations because  
4 marten, while they are in -- and I include them within  
5 the pines are not that abundant in the pines, so in  
6 terms of my calculations - and I did use them - they  
7 don't make really a big difference. It is things like  
8 snowshoe hare and spruce grouse and so on.

9 Q. I think you missed my point. Maybe  
10 you and I talk about featured species and habitat  
11 supply analysis in different terms.

12 If as an example in the Gogama study  
13 area, it was decided that there was a specific  
14 objective in terms of a population density --

15 A. For pine marten say?

16 Q. For pine marten.

17 A. Yes.

18 Q. And that corresponded to a certain  
19 supply of habitat.

20 A. And that was our objective, let's  
21 say.

22 Q. That's our objective.

23 A. Right, right.

24 Q. Now implicit in that would be the  
25 requirement for certain areas of pine habitat, correct?



1                   A. Well, under that prescription, if our  
2 focus were purely in the pine marten, one might forgo  
3 some of the pine, say, for more black spruce in the  
4 prescription.

5                   Q. Are you suggesting that -- I don't  
6 follow that. Are you suggesting that there is a  
7 habitat preference for pine marten for black spruce as  
8 opposed to jack pine?

9                   A. Yes, I would say so. And I base that  
10 on the notion that marten is primarily a rodent feeder  
11 on red-backed voles and small mammals that live in  
12 fairly old growth, black spruce, mixed late succession  
13 black spruce forest.

14                  Q. So if you were prescribing habitat  
15 for marten in the Gogama study area, that also would  
16 lead to the elimination of the pine habitat--

17                  A. That's right.

18                  Q. --that you have suggested is the most  
19 desirable?

20                  A. That's right. Not the most  
21 desirable --

22                  Q. But has --

23                  A. Yes, has significant, let's put it  
24 that way. This is a different habitat that should be  
25 recognized and is not being looked after by either

1 moose or pine marten. That's the idea.

2 Q. Are you familiar with the habitat  
3 supply suitability models that are developed by the  
4 U.S. forest service?

5 A. To an extent, yes, as I read them.

6 Q. And are you familiar with the one  
7 developed for pine marten?

8 A. Not specifically at the moment, no,  
9 but I've -- go ahead... No, not that I can immediately  
10 recall reading this prescription.

11 Q. So you don't know whether the  
12 prescription for pine marten is for a jack pine type  
13 stand or a lowland black spruce type stand or...

14 A. Not to that degree, no.

15 I could speak to that -- you know, I can  
16 refer to this, and I think we have submitted this in  
17 our reference material, "Marten and Fisher Response to  
18 Cutovers: A Summary of the literature and  
19 Recommendation from Management." And this is cited, so  
20 if you want more details on what it takes to get marten  
21 in our neck of the woods...

22 And I would come back to that point too  
23 that we must be very careful about using prescriptions  
24 in other parts of the species range as in the U.S. to  
25 apply what's going on in our cold boreal forests, cold

1 soil boreal forests.

2 Q. They don't have cold soil boreal  
3 forest in the U.S?

4 A. Not to the extent we do, no.

5 Q. Alaska?

6 A. Well, even there. I think that you  
7 are talking more in terms of marten habitat is a more  
8 temperate forest, temperate type coast forest. They  
9 certainly don't go on to the uplands and tundras.  
10 They are on the west slopes and so on where I think  
11 most most of the -- a lot of the productive Alaskan  
12 forest is more like British Columbia, a relative  
13 temperate boreal forest.

14 Q. Doctor Bendell, is it fair to say  
15 that your professional experience has focussed on the  
16 ecology of grouse?

17 A. I think so.

18 Q. And the other primary area in which  
19 you have researched and published in the area of small  
20 mammals?

21 A. Yes.

22 Q. And you wouldn't hold yourself out as  
23 an expert in large mammal management?

24 A. No, but I would be comfortable to  
25 engage in that dialogue because I have had several

1 students that have studied large mammals, moose,  
2 caribou.

3 MR. HANNA: Panel, thank you very much  
4 for your time.

5 Madam Chair, those are my questions.

6 MADAM CHAIR: Thank you very much, Mr.  
7 Hanna.

8 Mr. Cassidy.

9 CROSS-EXAMINATION BY MR. CASSIDY:

10 Q. Dr. Bendell, is abundance measured by  
11 population numbers or is it related in some context to  
12 population numbers of species?

13 DR. BENDELL: A. Yes, yes. You can  
14 think of it in terms of human populations when you talk  
15 about abundance, how many people are there.

16 Q. Can I just confirm something. Has  
17 anyone in the panel actually written a timber  
18 management plan?

19 A. No.

20 DR. MIDDLETON: A. No.

21 DR. SUFFLING: A. No.

22 DR. BENDELL: A. I have read them and  
23 contributed to them but never written a full plan.

24 Q. And Dr. Suffling, you wouldn't  
25 consider yourself to be an expert in wood supply

1 analysis or modelling, would you?

2 DR. SUFFLING: A. I am not a forester.

3 Q. So you wouldn't consider yourself to  
4 be an expert in wood supply?

5 A. Not in wood supply, no.

6 Q. Dr. Suffling, you said on Tuesday, I  
7 believe, and I think you repeated yesterday, that we  
8 seem to be very good at suppressing small fires but we  
9 don't seem to be so - if you will pardon the pun - hot  
10 at fighting large fires. Is that a fair summary of  
11 part of your evidence?

12 A. Generally speaking, yes, that's the  
13 case.

14 Q. Am I right that if you put out a  
15 small fire successfully that you have potentially  
16 prevented it from becoming a large fire?

17 A. Allowing for conditions, yes. You  
18 know, I have seen fires where in the case of prescribed  
19 burning where I think we had to put more kerosene into  
20 the woods, we burned more kerosene than we did fuel at  
21 the end of the day. We just couldn't keep the fire  
22 going. That fire was never going to become a large  
23 fire on that day. Now on other occasions people go in  
24 and suppress a small fire when obviously it's going to  
25 grow up.



1 Q. I think that's why I used the word  
2 "potentially"; it's not every small fire becomes a  
3 large fire, but --

4 A. No. That's the point I was trying to  
5 make. Not every small fire will grow but some will.

6 Q. Okay. Thank you.

7 I think I provided you with a copy of a  
8 transcript reference from volume 283 and I just want to  
9 ask a couple of you some questions. And I have got a  
10 copy of this for the Board. It is only two pages so I  
11 am going to pass it out.

12 DR. BENDELL: A. I left it in the pile  
13 at home.

14 Q. I am sure Mr. Maser won't be offended  
15 that you forgot his transcript at home. But I do  
16 want --

17 A. I have read it though; I am familiar  
18 with it.

19 Q. All right. Great.

20 Have you all had a chance to read that?

21 DR. MIDDLETON: A. Yes.

22 DR. SUFFLING: A. (Nodding)

23 Q. I just want to ask you a question  
24 about part of it. It is in response to Madam Chair's  
25 question, and I am looking at volume 283, page 50623,

1 line 13, where Madam Chair asked Mr. Maser if he could  
2 sum up what his preferred approach is to wildlife  
3 management with respect to the forest.

4 And Mr. Maser indicated that his  
5 preference would be to manage habitats. And Madam  
6 Chair said "and not worry about populations"? And the  
7 witness said "Populations cannot be counted. You can  
8 count trees, they stand still. Even flying in open  
9 country for..." -- and I believe that should be feral  
10 horses, which I am told are wild horses.

11 A. F-e-r-a-l, correct.

12 Q. Am I right that means wild?

13 A. Right.

14 Q. "...even flying in open country for  
15 feral horses and antelope in sage brush with airplanes  
16 I have tried counting them. I defy anyone to get an  
17 accurate count, let alone in a forest."

18 And so a little later on Mr. Maser said  
19 so what you do is you manage the habitat. You can  
20 expect to have a healthy population and "I can manage  
21 for habitat distributed in time and space on an acreage  
22 over landscape. That I can do, that's planable...".

23 Do you agree with that, Dr. Middleton?

24 DR. MIDDLETON: A. Yes, I agree with it  
25 strongly with the single proviso that habitat here is

1 understood as habitat for all species.

2 Q. Right. Okay.

3 A. I would also say that I think Mr.  
4 Maser would agree that he was being a little bit  
5 rhetorical in emphasizing the difficulty of making  
6 population counts. We do of course make population  
7 counts. The symptom is that they typically have very  
8 large variances around them.

9 Q. I will let you take that up with Mr.  
10 Maser some other time at your convenience.

11 But I want to ask you, Dr. Bendell.  
12 Having read that, I don't understand why you gave us  
13 evidence on the numbers and abundance of wildlife in  
14 the Gogama area which you told me earlier was related  
15 to population numbers.

16 DR. BENDELL: A. I don't agree that  
17 strongly with Dr. Maser's position on that. I think  
18 that if we knew enough about the habitat requirements  
19 of various species we, would indeed be able to predict  
20 from the habitats what species are present and their  
21 abundance.

22 And I would hope that eventually we will  
23 get to a situation where the habitat is the right hand  
24 and the species determination the left. And that's the  
25 way things will work together.

1                   Simply having said that, I would regard  
2     it as a difference in emphasis. But I come back again  
3     to the fact that in my view what we are concerned about  
4     is the species and how well they are doing, how many  
5     there are, where they are, what they will provide to  
6     us.

7                   And even if we were absolutely sure that  
8     the landscape was giving us what we wanted, I think we  
9     would want to by some process, via harvest results or  
10    by going in and doing some ground truthing, that we  
11    want to make sure that, what I think we want, the  
12    species, are indeed on the ground, and I do not see it  
13    as a great difficulty. And that's where I would spend  
14    numerous hours and kegs of beer I am sure with Dr.  
15    Maser trying to thrash that out.

16                  DR. MIDDLETON: A. And may I add also  
17    that of course the system for habitat planning over  
18    space and time that we have described in some detail  
19    incorporates exactly the elements Dr. Bendell has just  
20    talked about.

21                  DR. BENDELL: A. And I put to you these  
22    what I consider rather alarming data about the decline  
23    in a species that I never would have thought was  
24    declining, the white-throated sparrow.

25                  Q. So as I understand it, you see more

1 of a mixture than Mr. Maser did of it's not strictly  
2 habitat management, there is a component of population  
3 management or population management is a component of  
4 what the overall is?

5 A. Yes, yes. You could put it that way.  
6 And I would hope that we are all together on that.

7 DR. MIDDLETON: A. Quite so.

8 DR. SUFFLING: A. Yes.

9 Q. Dr. Suffling, as I understand your  
10 evidence on Tuesday, I believe --

11 MR. MARTEL: Could I stop you there--

12 MR. CASSIDY: Sure, any time.

13 MR..MARTEL: --because I just want to  
14 clarify.

15 Just listening to your answer. I've  
16 listened to Dr. Middleton and I think Dr. Suffling talk  
17 about quantitative analysis. Is that not a  
18 contradiction? That really you want to know if the  
19 population is good. How do you quantify it without the  
20 numbers game if you want to get into the absolute  
21 quantification --

22 DR. BENDELL: --We do quantify it, sir.

23 MR. MARTEL: But only in almost a  
24 guesstimate?

25 DR. BENDELL: Not indeed. I can give you



1 some reprints of our prediction of the density of  
2 spruce grouse say in various stands.

3 MR. MARTEL: How do you know there are  
4 that many there?

5 DR. BENDELL: Because we have counted  
6 them. We have done preliminary inventory work, counted  
7 them. And then we have gone to other stands where we  
8 have predicted on what we know about the relationship  
9 between that density and that stand, made predictions  
10 and gone in and found that number.

11 So I don't see this problem of counting  
12 all that difficult. Now, I don't want to over-simplify  
13 it. But I think for the purposes that we want in terms  
14 of reasonably intelligent management, we can make these  
15 determinations.

16 And if we can't then I would say that we  
17 are probably better off then going to the habitat  
18 approach as our best bet because I come back again that  
19 the health of the species on the ground, the tree or  
20 the plant or whatever, or the moose, that's the start.

21 MR. CASSIDY: Q. I guess I am having  
22 some concern based on what Mr. Martel's question was in  
23 respect of your witness statement where you state on  
24 page 8, Dr. Bendell, you quote what appeared to be two  
25 portions of Jack Ward Thomas' writings. They are on

1 page 8 where -- I assume these are two articles because  
2 they are 1982 and 1988 references; is that right?

3 DR. BENDELL: A. That's right.

4 Q. So you appear to have blended them  
5 together to give me the impression, at least, as a  
6 reader that Mr. Thomas is saying that game species are  
7 affected by various things, and indicators of those  
8 species probably indicate little beyond their own  
9 numbers.

10 A. Yes, I think that --

11 Q. And the difficulty I have -- just let  
12 me finish - the difficulty I have is that when we get  
13 into this numbers game, I hear Dr. Thomas, and with  
14 your apparent approval because you quoted him, saying  
15 that; but on the other hand, you led all sorts of  
16 evidence about the numbers of various species in  
17 Gogama, and I am trying to understand what I should do  
18 with those numbers when I hear Dr. Maser also  
19 apparently say what Mr. Thomas said that he defies  
20 anyone to get an accurate account.

21 A. Thomas didn't -- did he? I don't  
22 know if his statement of accurate --

23 Q. No, I am bringing in Mr. Maser's  
24 comments here as well.

25 A. As I say, I disagree with Mr. Maser.

1                   Q. Do you disagree with Mr. Thomas in  
2 reference to the comment about numbers being little  
3 more than just indicating beyond their own numbers?

4                   A. Well, the intent of this statement is  
5 there is the idea that the moose as an indicator  
6 species, if you know how many moose are in the  
7 landscape it will tell you a vast array of what else is  
8 in the landscape, I disagree with that.

9                   I think Thomas is disagreeing with it  
10 when he says here that the moose -- once you have  
11 obtained the number of the moose or the elk, you have  
12 little else other than counts of moose and elk. Fair  
13 enough. I agree with that.

14                  Whereas, if you were to go Maser's route,  
15 say, that the elk represents a good representative of  
16 elk habitat and in that habitat along with the elk you  
17 will find such and such and such and such at such and  
18 such and such a density or abundance you see.

19                  And I don't think we can go that far.  
20 And our idea is you've got to broaden your feel or  
21 perception of wildlife, the species that we are  
22 concerned about.

23                  Q. I want to turn to you, Dr. Suffling,  
24 with respect to your evidence on Tuesday, and it's in  
25 relation to the Forests for Tomorrow term and condition

1 25, sub-section or paragraph 4, where it's stated  
2 that -- do you have that there?

3 DR. SUFFLING: A. I think so, yes.

4 Q. Where it's stated within five years  
5 of this approval MNR shall replace forest management  
6 units with eco-sections or where appropriate  
7 eco-districts whose size, shape, and boundaries shall  
8 reflect ecosystem integrity.

9 Am I correct that it is your position --  
10 and I think you may have to flip down Mr. Wickware's  
11 map there, which was part of Exhibit 715. That's it.

12 Let me understand something. It's your  
13 position that according to that term and condition,  
14 there should be a reconfiguration of the administrative  
15 boundaries known as forest management units to conform  
16 to the various eco-regions and eco-districts depicted  
17 on the map that was part of Exhibit 715?

18 A. Yes. Now, I would have to expand on  
19 that just slightly. These are terms and conditions put  
20 forward by Forests for Tomorrow. And in my witness  
21 statement itself, I made no reference to this topic.  
22 So it came up in I am not sure whether it was evidence  
23 in chief or it was cross-examination on Tuesday, and  
24 what I did essentially was to defend Forests for  
25 Tomorrow's position basically. Now, I hadn't made any



1 particular statement one way or the other on this  
2 topic.

3 I would say that, just to clarify this,  
4 perhaps we can cut out a lot of cross-examination as a  
5 result, as a general principle, I would like to move  
6 towards ecosystem-based units.

7 Q. Right.

8 A. When I look at the licensing system  
9 that exists currently, some of the licences, some of  
10 the management units in terms of their boundaries make  
11 a lot of common sense. Some of them, particularly the  
12 real mishmash that you get in here, which is really a  
13 product of history, make very, very little sense at  
14 all.

15 If the Ministry was sort of organizing  
16 forestry in that area for the first time, there's no  
17 way that they would adopt those boundaries. You've got  
18 little bits and pieces. If it were separated timber  
19 licences, well, they would have to go and get timber  
20 from somewhere else. Companies would be trading timber  
21 off because of the logistics and all that stuff.

22 So in economic and practical terms, those  
23 licences are a problem. And I think that most people  
24 in industry and in the Ministry and elsewhere would  
25 accept that quite generally without argument. However,



1 you know, we are stuck with the situation that exists.

2 Now, as a result of various licensing  
3 arrangements, of course there are mills and there are  
4 roads patterns and all sorts of other practical  
5 constraints. Now I have worked in the north and I have  
6 seen companies in operation. I have seen the Ministry  
7 in operation and I know, I accept that nobody is going  
8 to turn around and wave a magic wand and change all  
9 those boundaries overnight without creating some kind  
10 of mayhem.

11 But at the same time, when changes are  
12 made, when they are appropriate, then it is my strong  
13 contention that the boundary changes that are made  
14 should begin as quickly as possible - and I would  
15 stress that "as quickly as possible" - should begin to  
16 approximate the boundaries of natural regions.

17 I believe that that's in the interests of  
18 commercial forestry and I believe that it's probably in  
19 the interests of management of the landscape and  
20 conservation purposes.

21 Q. My question was simply aimed at what  
22 you believe should be the driving force at the  
23 redefinition of the boundaries that you would like to  
24 see; and as I understand it, the driving force, the  
25 primary reason or the factor that should be considered

1 is the ecosystem integrity and the ecosystem type that  
2 is in existence in the area. Is that correct?

3 A. Yes.

4 Q. That's all I wanted.

5 A. I expanded on this because, as I  
6 pointed out, when you look at airphotos and satellite  
7 photos of various places around the world, you can see  
8 on the map -- not on maps, but you can see from space  
9 the boundaries that our administrative regions have  
10 imposed on the landscape in terms of actual practice  
11 and management.

12 Q. I understand that.

13 A. And those boundaries sometimes make  
14 very little ecological sense.

15 Q. Great. I heard all that.

16 What I am interested in is can you tell  
17 me if in the regions which are depicted on Exhibit 715,  
18 the map, are there any economic or social or cultural  
19 criteria involved in the development of those  
20 ecosystem, -regions, -districts, -sections?

21 A. Yes and no. When the people  
22 developed the map, they didn't take those things into  
23 account. However, when people were settling the land,  
24 when companies were setting up, when railways were  
25 routed, they did because these are natural regions.

1                   So, for instance, we have Rainy River  
2                   area through here and people talk about it as a natural  
3                   region. It is an economic unit, it's a social unit, it  
4                   has its own infrastructure, and it reflects by and  
5                   large a natural region.

6                   Q. The regions you propose, however, and  
7                   the system that you would like to see in place as  
8                   opposed to what's currently in place is going to be  
9                   driven by ecosystem integrity as its divying force; and  
10                  would you agree with me that that does not include  
11                  economic, social or cultural criteria? It is  
12                  strictly --

13                  A. Not in itself.

14                  Q. Sorry, just let me finish.

15                  It is strictly based on ecosystem  
16                  integrity; is that fair?

17                  A. Yes. Now, take an example along here  
18                  with this district here. It runs from Sudbury and  
19                  there is a plain all the way along the shore, the North  
20                  Shore of Georgian Bay in the North Channel here.

21                  I don't think anybody is going to say  
22                  that there is going to be some office there that is  
23                  going to manage that unit as a separate situation.  
24                  That's one where in many senses the management from say  
25                  Sault Ste. Marie or Sudbury is -- plainly there are

1 going to have to be some trade-offs there. At the same  
2 time, that plain along the coast there is a very real  
3 economic, social and ecological region and there is  
4 every reason to manage it that way.

5 Q. So there are coincidences which may  
6 occur where those two influences --

7 A. They are not just coincidences; they  
8 are causal relationships.

9 Q. Fine. One or the other.

10 There is a relationship with respect to  
11 some; is that correct?

12 A. The only point I am trying to make is  
13 I don't think anybody in their right mind is going to  
14 be rigid or doctrinal about this. This is a guiding  
15 principle and then you work with it.

16 Q. So that if --

17 A. I can't speak for FFT, but I think  
18 that probably they would agree with that.

19 Q. So in your view there would be  
20 departures from the strict form of ecosystem integrity  
21 in determining these regions where appropriate for to  
22 take into account economic, cultural or social criteria  
23 that would be deemed important?

24 A. If the provision of management by one  
25 of these regions was shown not to make common sense,



1 then there is no reason to do it.

2 Q. Let me show you an example. If a  
3 community forest is developed for a particular region  
4 which may in fact overlap or for a particular community  
5 which a community says, 'We want this managed as a  
6 community forest', it may in fact overlap to what you  
7 might call eco-regions that should be managed for their  
8 own integrity. You would see that that as an  
9 appropriate situation where you would depart from  
10 strict ecosystem integrity in the management?

11 A. I don't see it as a conflict really.  
12 Supposing you had two regions that were rather  
13 different. They have an ecological integrity, each  
14 one. But each one is going to provide a different mix  
15 of wood and maybe there is a mill or a community that  
16 needs a wood supply for both of those, I think that  
17 could be worked out. It's only what happens anyway:  
18 Companies trade off and...

19 Q. So the administrative boundaries may  
20 not then have to conform to the ecosystem distinction  
21 or region; is that right?

22 A. To some extent. But let me just  
23 introduce a caveat there. If a company is managing an  
24 area and if it's a large company and a large area, it  
25 would make a lot of sense if that area could have some



1 kind of ecological basis, and for this reason: that  
2 when you try to track the success of the company in  
3 maintaining the wood supply or in providing recreation  
4 hunting opportunities, or in making provision for rare  
5 and endangered species, or anything else, then to do  
6 that on an ecological basis can make some sense.

7 Q. Sure. What about --

8 A. So to the extent that it's practical,  
9 I think these boundaries should be modified.

10 Q. What about the situation, Dr.  
11 Suffling, where two native bands have a treaty right or  
12 a treaty claim or a land claim or an area which goes  
13 right down the middle of that region and they want to  
14 split the region in two and each native party would  
15 manage it for its use and the native party on the right  
16 would manage it for its use. What do you in that  
17 situation?

18 A. You negotiate like everyone else.

19 Q. So you would see it as a possible  
20 break-up of an ecosystem in that circumstance?

21 A. What I mean is that when there is a  
22 conflict between different interests, it is the  
23 tradition, and it's probably a good tradition in most  
24 cases, in our society and in other societies it's often  
25 the tradition to negotiate something.

1                   Now eventually one party may see the  
2           sense of changing the situation or you may end up with  
3           a compromise or you may end up with disagreement, a  
4           Meech Lake situation, heaven forbid.

5                   Q.   So if I can cut to the chase on this.  
6           You see term and condition 25(4) as being negotiable to  
7           take into account all these common sense realities that  
8           might arise, such as the examples I have given you?

9                   A.   I can't see the world in other terms.  
10          I can't speak for FFT, but they seem to be pretty  
11          reasonable people to me.

12                  Q.   Good.   Thank you very much, Dr.  
13          Suffling.

14                  If I can move on to just one final  
15          portion, Dr. Suffling.   Am I correct that with respect  
16          to this concept of landscape management there has not  
17          been any study done of the economic viability of  
18          landscape management as forming part of timber  
19          management in Ontario?   And Dr. Middleton may be able  
20          to help out on this.

21                  A.   Can you pass that by me again.   I am  
22          getting a little tired.   It's not your fault, it's  
23          mine. Can you ask me that question again.

24                  Q.   Yes, I'm sorry.

25                  And Dr. Middleton, you may be able to

1 help out on this because you were part of the Essa  
2 exercise.

3 My understanding is that there has been  
4 no -- Forests for Tomorrow or Essa or no one has done a  
5 study of the economic feasibility or viability or  
6 impact of landscape management being practised in  
7 Northern Ontario.

8 DR. SUFFLING: A. I would strongly  
9 suspect that that's the case. I would love to have the  
10 resources to do that.

11 DR. MIDDLETON: A. I am unaware of any  
12 specific study that set out to look explicitly at that.  
13 I do point out again that the Essa document states  
14 explicitly, and it's certainly part of the process that  
15 the system to be practical is one of the central  
16 things. In the spirit that Dr. Suffling has just been  
17 discussing, this wasn't a utopian purely academic  
18 exercise, so those things were taken into account but  
19 no specific study.

20 Q. Right. And I guess all of that study  
21 of the economic viability would depend at some point  
22 upon firming up these eco-classifications that were  
23 discussed in Essa and which you have discussed in your  
24 evidence?

25 A. I think the definition of those would

1 take into account the economic and social realities of  
2 implementation and other things as part of the design.

3 Q. And then once those definitions were  
4 firmed up, you would then have to have a study to  
5 determine whether or not it's economically viable to  
6 classify the province in that fashion and administer  
7 the province in that fashion; right?

8 DR. SUFFLING: A. If a study is designed  
9 to -- if an initial study is designed to fine-tune the  
10 system and get some kind of hardened approach up and  
11 running, then I would be all for it.

12 If the study is designed to keep a lot of  
13 consultants fat and not actually do anything in the  
14 land, then I get annoyed with -- there are studies and  
15 studies. (Laughter)

16 DR. MIDDLETON: A. With no offence  
17 intended to the opposite desk.

18 Q. You both do consulting work as well,  
19 don't you?

20 DR. SUFFLING: A. Sure.

21 Q. I mean you are insulting yourself too  
22 if you do.

23 A. I'm not making value judgments about  
24 organizations; I am just saying that there are studies  
25 that are positive and proactive.

1 Q. Sure, I understand.

2 A. They resolve questions.

3 And there are other studies that maybe  
4 delay making decisions.

5 DR. MIDDLETON: A. I would make a  
6 different point and not a contrary one. The whole  
7 spirit of what you are trying to do here is break down  
8 artificial distinctions between in the first place  
9 timber management and wildlife management, but in the  
10 spirit of documents like the World Conservation  
11 Strategy for example --

12 Q. The what?

13 A. The World Conservation Strategy.

14 The separation out of economic matters or  
15 social matters as different from the scientific matters  
16 is quite contrary to the very spirit of the whole  
17 thing, so I would like to see that incorporated into  
18 every step.

19 Q. Thank you. I just want to move now  
20 to the final part of my cross-examination which means  
21 we should probably be finished by noon.

22 MADAM CHAIR: Thank you, Mr. Cassidy.

23 MR. CASSIDY: Q. And I just want to put  
24 an interrogatory answer to you, Dr. Bendell. This is  
25 OFIA Interrogatory No. 6 for this panel.



1 And perhaps we could mark that as the  
2 next exhibit, Madam Chair. I don't believe Mr.  
3 Lindgren filed it in his collection.

4 MADAM CHAIR: Exhibit 1748.

5 MR. CASSIDY: Thank you.

6 ---EXHIBIT NO. 1748: OFIA Interrogatory No. 6 to  
7 Panel 9.

8 DR. SUFFLING: Excuse me, Madam Chair,  
9 what was the number on that one?

10 MADAM CHAIR: 1748.

11 MR. CASSIDY: Q. Again, I want to come  
12 back to page 8. Mr. Thomas stated, according to you,  
13 Dr. Bendell, that socio-economic and political criteria  
14 are not appropriate for selecting ecological indicators  
15 and you can probably explain the context of that if it  
16 isn't clear in your answer.

17 And then on page 13 of your witness  
18 statement, you stated - and it's noted in the  
19 interrogatory, Exhibit 1748 - that abundance  
20 distribution and value are all important properties of  
21 species that must be considered in their conservation  
22 and management.

23 And I asked you to give me a list of the  
24 factors or criterion that would be used in determining  
25 the value property of a species as referred to on page

1 13 of your witness statement, and you listed off a  
2 series of things after referring me to Forests for  
3 Tomorrow's statement No. 4 as being included in the  
4 consideration of the value of wildlife.

5 But by my looking at it, I see a lot of  
6 things which are what Dr. Thomas presumably would  
7 consider to be socio-economic or political criteria in  
8 terms of picking appropriate ecological indicators.

9 And my question is: If it's not  
10 appropriate to use that criteria for picking ecological  
11 criteria, why is it appropriate to consider that  
12 criteria in valuing wildlife?

13 DR. BENDELL: A. I suppose it's your  
14 objectives. And I come back again with the idea that  
15 if we are going to use our land wisely, we have to know  
16 the land, the information about what it's truly like  
17 and so on, and how it functions. So that's the pure  
18 objective ecological assessment.

19 Now we may choose to trash that  
20 ecological productivity and put in a city or whatever  
21 as the case might be, and I am quite prepared to accept  
22 that. But there is an example of a political social  
23 decision overriding. And all I will say is: Do you  
24 realize if you do that, such and such will be gained or  
25 lost because of what we know of the ability of that

1 land and its wildlife to provide? Okay. So, that's I  
2 think how I would try to respond to your first  
3 initiative.

4 The second idea is in the same way if we  
5 are given an animal, say, let's call it a grouse, then  
6 we can look upon this.

7 Q. Funny about that, eh? (Laughter)  
8 I won't grouse about it.

9 A. Let's talk about caribou or  
10 something.

11 Q. Grouse examination...

12 Go ahead. We are degenerating here.

13 A. We can look at that in a variety of  
14 ways and we can do it quite objectively, ecologically  
15 and say: What are you like? What are your insides  
16 like? What parasites do you have? How you have  
17 evolved? Where have you come from? These are all  
18 fascinating questions. Don't let me bore you.

19 Q. No, I have heard everything you said  
20 in the answer to my cross-examination, so...

21 A. Okay. And why are you in this part  
22 of the country and not in another part of the country?  
23 Those are all -- and if I choose to harvest you, how  
24 many can I take? I think these are all sort of  
25 ecological. That's the point I'm trying to make.

1                   Now the next thing is we have our own  
2     perceptions of the world and that's where all the other  
3     values take off. And since we are all different and we  
4     all have different perceptions, then we have to sit  
5     down now and somehow decide what we are going to do  
6     with this grouse, okay.

7                   Q. Okay. So as I understand it then, in  
8     terms of the overall management of a species, you  
9     consider all the socio and economic and political  
10    criteria; but in terms of picking which one you will  
11    use as an indicator or a local featured species, you  
12    can't use that?

13                  A. It may not be appropriate, no. I  
14    mean, for example, there may be --

15                  Q. Well, he says it's not appropriate.  
16    Sorry to interrupt, but Dr. --

17                  A. I would say that it is not -- it may  
18    be appropriate but it might not be and not likely to be  
19    appropriate.

20                  I mean, if a featured species really did  
21    its job, then it is conceivable that one very obscure  
22    item in an ecosystem would reveal a great deal about  
23    everything else, and that item in itself would be of  
24    really no consequence, you see, in terms of our human  
25    evaluation of it beyond the psychological implications.

1 Am I just muddifying or obscurifying the waters or  
2 whatever?

3 Q. Oh, it's your evidence. I thought I  
4 would just try to get it clear, but...

5 A. Well, if I'm not clear then ask.

6 Q. No, that's fine. I have your  
7 evidence.

8 A. There are ways of valuing things, I  
9 guess, and I think this represents how you might go  
10 about doing that evaluation. That is a short --

11 Q. Except you can't use this criteria  
12 when you are picking featured species or in --

13 A. No, no, it's not necessarily so,  
14 that's right.

15 Q. Are there situations in which you  
16 would do it? See, Dr. Thomas seemed to be so definite,  
17 and I thought you would agree with it since you quoted  
18 it: is that you can't do it.

19 A. Hang on a moment. It depends how you  
20 define "featured species". I mean if you define  
21 featured species as that species which features the  
22 biggest buck from the forest, okay, and then you say  
23 that's my featured species, and I defend that on an  
24 economic value, on an economic basis.

25 But it doesn't follow that that thing



1 that you picked is going to be the one that features  
2 all the ecological implications of that forest, which  
3 is another thing you might want of a featured species.

4 MR. CASSIDY: All right. Those are my  
5 questions.

6 MADAM CHAIR: Thank you very much, Mr.  
7 Cassidy.

8 Ms. Blastorah?

9 MS. BLASTORAH: I have one minute...

10 MS. SEABORN: I think I am starting in  
11 any event.

12 MADAM CHAIR: Sorry, Ms. Seaborn. How  
13 long will you be?

14 MS. SEABORN: I will be about twenty  
15 minutes.

16 MADAM CHAIR: Okay, good.

17 And Ms. Blastorah?

18 MS. BLASTORAH: Unfortunately Mr. Freidin  
19 isn't in the room; he is going to be covering one area  
20 in the cross-examination. I expect he will be -- he  
21 estimated yesterday about an hour. And I would  
22 estimate that we will be able to finish today,  
23 depending on, of course, how long it takes...

24 MADAM CHAIR: Well, the Board would  
25 propose having a shorter -- an hour's lunch break to

1 accommodate the cross-examination. We don't see any  
2 point in calling all the witnesses back next week if  
3 it's only going to be for a short time.

4 MS. BLASTORAH: I can't guarantee that  
5 it's necessary, but I suppose it's wise to take a  
6 shorter break.

7 MADAM CHAIR: Okay. We'll be back at one  
8 o'clock then.

9 ---Luncheon recess at 12:01 p.m.

10 ---On resuming at 1:07 p.m.

11 MADAM CHAIR: Please be seated.

12 Go ahead, Ms. Seaborn.

13 MS. SEABORN: Thank you, Madam Chair, Mr.  
14 Martel.

15 Good afternoon, panel.

16 CROSS-EXAMINATION BY MS. SEABORN:

17 Q. I only have a few questions for you,  
18 members of the panel. They will largely be for Dr.  
19 Middleton. And I want to deal in particular with the  
20 draft Essa report, which is Exhibit 1714, and Forests  
21 for Tomorrow's terms and conditions.

22 Could you turn to page 1, Dr. Middleton,  
23 of the Essa report.

24 DR. MIDDLETON: A. Yes.

25 Q. Now, under section 1.2, development

1 of the plan, we see in the second paragraph, starting  
2 the third line down. It says:

3 Consequently, the initial project  
4 meeting in May of 1990 was convened to  
5 consider how wildlife might be grouped  
6 for considering effects of timber  
7 management.

8 And as I understand what happened was  
9 that after that meeting there were two workshops;  
10 correct?

11 A. That's correct.

12 Q. And I understand from the report and  
13 your testimony that it was agreed that wildlife should  
14 be grouped by habitat?

15 A. That that should be the primary  
16 approach without moving out the others as subsidiary to  
17 that.

18 Q. And I am looking at the third  
19 paragraph under section 1.2, development of the plan,  
20 where it says essentially it was agreed that wildlife  
21 should be grouped by habitat.

22 A. That's correct.

23 Q. And then if we look at the next  
24 paragraph, it says that:

25 Understanding and expressing such

1 effects in a way that is directly  
2 applicable in the ongoing development of  
3 timber management plans has in turn led  
4 to identification of an integrated  
5 landscape classification system, which  
6 could serve as a common basis for timber  
7 and wildlife habitat management as the  
8 primary research priority.

9 And we are left, are we not, with an  
10 integrated landscape classification system as the  
11 primary research priority?

12 A. That's correct.

13 Q. And this report reflects that primary  
14 research priority?

15 A. I think it quite clearly sets that  
16 out, yes.

17 Q. And that's of course on the  
18 assumption that the report is implemented by MNR?

19 A. Yes, this is a procedure initiated by  
20 MNR, but it has not been accepted by MNR at this stage.

21 Q. Now if we flip to page 61 of the  
22 report, we find the section that sets out the tools  
23 that will result from the research program that is  
24 described in the body of the report.

25 A. That's correct.

1 Q. And partway down that paragraph, I  
2 was interested in this statement. It says:

3 Successful development of these tools  
4 has the potential to revolutionize the  
5 way in which integrated resource  
6 management planning is conducted within  
7 the province.

8 Do you agree with that statement?

9 A. Yes, I do. Obviously it's not a  
10 scientific statement, it is more a reflection of the  
11 spirit of the Essa procedure where these ideas came  
12 together in such an exciting way, and I think this is a  
13 correct reflection of that.

14 I certainly agree with the content of it:  
15 that it has the potential to be a central tool for  
16 integrated resource management.

17 Q. And on page 62 of the report, there  
18 is a list of what are referred to as "deliverables",  
19 which I find an awkward word to use, but I take it  
20 these are the products that are being proposed for the  
21 first five years of the research program?

22 A. That's what I understand by the word.

23 Q. And as well, I took it from the text  
24 that it could take -- that, first of all, that these  
25 are interim deliverables?



1                   A. That's correct. I think on the  
2 grounds that what is being proposed here is a research  
3 program and of course one never knows in advance what  
4 the results of a research program will come up with.  
5 These things are things we are pretty sure will start  
6 first. I'm not sure what the final set will be.

7                   Q. And the total length of the program  
8 is anticipated if it's implemented to be eight to ten  
9 years?

10                  A. I believe that's the case.

11                  Q. Now, in source book No. 2 that was  
12 filed with your witness statement, which is Exhibit  
13 1713B, we find MNR's policy from the Wildlife Branch  
14 called "Management of Timber for Featured Wildlife  
15 Species".

16                  A. Yes, I have that.

17                  Q. Do you have that in front of you?

18                  A. Yes.

19                  Q. Now on the second paragraph of this  
20 policy, which was issued in 1990, the last line states  
21 that this policy may be superseded by a revised  
22 wildlife strategy. And I take it then that -- is it  
23 your understanding then that the policy could be  
24 superseded by the results of the research program that  
25 we have talked about in the Essa report.

1                   A. I am not sure if the strategy  
2 referred to here is in fact the outcome of the Essa  
3 report. I know there has been very recently announced  
4 a national wildlife policy to which all of the  
5 provincial Ministries of Resources or equivalent have  
6 subscribed. I don't know if it's that policy which is  
7 referred to here or something coming out of the Essa  
8 report later on.

9                   Q. Okay. So in the reference where it  
10 says the July 1989 wildlife working group summary of  
11 terms of reference, you are not sure if that refers to  
12 the terms of reference for the Essa study or the terms  
13 of reference of some other study?

14                  A. That's correct. I don't know if  
15 that's the case.

16                  Q. Now I think you have made it quite  
17 clear in your testimony that if the research projects  
18 go ahead and landscape management is implemented, that  
19 we could still feature species locally or at the  
20 management unit level; is that fair?

21                  A. We'll still deal with species. I am  
22 a little bit hesitant to use the word "featured  
23 species" because then we get into the uppercase  
24 featured versus the lowercase featured and other  
25 technical details of different systems, but it is

1 certainly correct to say that other species will be  
2 dealt with on a species by species basis within this  
3 program.

4 Q. And could you turn for a moment to  
5 Forests for Tomorrow's terms and conditions, page 53 of  
6 Exhibit 1610. Now, term and condition No. 64 is the  
7 term and condition that relates to guidelines and  
8 manuals for timber management. And I note in the bold  
9 type that in 64 there is reference to having  
10 implementation manuals being used to provide  
11 supplementary information for the landscape planning  
12 and management system described in Condition 26.

13 A. Yes.

14 Q. Now would you agree that with  
15 landscape planning -- or would you agree that the use  
16 of guidelines is not necessarily inconsistent with a  
17 landscape management approach?

18 A. Oh, no, it is not inconsistent. It's  
19 not a sufficient tool to do the whole job but it is not  
20 inconsistent. And here there is an important  
21 distinction between the local short-term scale of doing  
22 things, the typical good forestry practice, and the  
23 longer terms goals for the landscape we are talking  
24 about here.

25 The ecosystem level landscape level goals

1       that we have been talking about assume that the good  
2       forestry practice is occurring on the ground in small  
3       areas. If I may use an analogy, it is like saying that  
4       my ability to keep my apartment neat and tidy does not  
5       overlap with my city's planning department's ability to  
6       plan land and zone and so on. Both of those are  
7       needed, both scales are needed if we are to have the  
8       total job covered.

9                       And so I see these guidelines as being  
10       part of good forestry practice on a small scale,  
11       short-term scale of day-to-day operations, which will  
12       dovetail with the larger scale goals that we are  
13       talking about for the most part in our testimony.

14                      Q. And in the context of provincial  
15       guidelines, we have items 64(1)(a) through (e), which  
16       are the guidelines that MNR has proposed to the Board  
17       be used for planning purposes; and then below those, we  
18       see five additional ones that are being presented by  
19       FFT.

20                      A. Yes.

21                      Q. Now Dr. Suffling, do you know whether  
22       the guidelines for the protection of biological  
23       diversity are intended to be prepared in concert with  
24       the research programs that are referred to in the Essa  
25       report?

1 DR. SUFFLING: A. Intended by whom,  
2 ma'am.

3 Q. Is it FFT's intention that these  
4 guidelines would be formulated in concert or in  
5 parallel with the research program?

6 A. I should think that the general  
7 thrust of the Essa report is something that has pleased  
8 the people in FFT and that they would be happy to see  
9 that done.

10 Q. And did you have any hand at all in  
11 the suggestion of guidelines for the protection of  
12 biological diversity, in terms of incorporating these  
13 as part of the terms and conditions?

14 A. No, I didn't, but I would see that as  
15 essential.

16 Q. Now --

17 A. Excuse me a moment. I think I have  
18 misconstrued what you said. When you say the  
19 guidelines, you are not talking about Item 26 of  
20 wherever it appears earlier on?

21 Q. What I am talking about is that  
22 Forests for Tomorrow in their terms and conditions have  
23 suggested an additional guideline be prepared in  
24 relation to timber management guidelines for the  
25 protection of biological --



1                   A. So guidelines in the sense of page 53  
2 here?

3                   Q. Yes.

4                   A. No, I did not have a hand in drafting  
5 that, but it would seem to be a good thing to do.

6                   Q. Thank you. Now at page 21 of the  
7 terms and conditions is the beginning of term and  
8 condition No. 26, which has been discussed at length.  
9 And is it fair to say, Dr. Middleton, that what term  
10 and condition No. 26 does is provide the detail  
11 associated with the criteria for landscape management?

12                  DR. MIDDLETON: A. Preliminary details  
13 to start with, yes.

14                  Q. And Mr. Hanna asked you a number of  
15 questions about the criteria that you have adopted in  
16 the terms and conditions, and I believe, Dr. Middleton,  
17 you said on a number of occasions, that these criteria  
18 and the numbers and percentages associated with them  
19 are merely a starting point?

20                  A. That's correct.

21                  Q. And I take it you would anticipate  
22 that the results of the research program and  
23 implementation of the tools to conduct a landscape  
24 planning and management system in timber management  
25 planning could change the particulars of these terms

1 and conditions?

2 A. I am almost certain they will change  
3 them.

4 Q. Now at the conclusion of your  
5 evidence -- and I just want to be clear on this, Dr.  
6 Middleton, in terms of what you are proposing to the  
7 Board. Mr. Lindgren asked you a specific question -  
8 and I don't have the precise words - but I think he  
9 asked you whether or not you would be satisfied if MNR  
10 implemented the Essa research program and implemented  
11 landscape planning, and you responded yes?

12 A. If I understand the context of it, I  
13 certainly said "yes" with the understanding that the  
14 Essa procedure carried on in the spirit with which it  
15 had gone so far.

16 Q. And so the only assumption built into  
17 that answer is that the final report, if implemented,  
18 would be in largely the same form as we see it now in  
19 terms of a draft?

20 A. That's correct.

21 Q. And would you accept that the details  
22 associated with the implementation and integration of  
23 landscape planning and planning for biological  
24 diversity should be determined by those carrying out  
25 the research and implementing operationally the tools

1 which would support this integrated approach to  
2 wildlife in timber planning?

3 A. If I can make sure I understand the  
4 question. You are asking whether the implementation of  
5 the results from the Essa program should be designed by  
6 those people who actually are working with the forest;  
7 is that correct?

8 Q. Yes. I guess what I am suggesting is  
9 that there is a lot of detail in the terms and  
10 conditions. And what I am suggesting is that if there  
11 is a determination made that the research projects  
12 should go ahead, there are going to be certain - they  
13 have been called deliverables - certain conclusions  
14 that are going to be reached as a result of the  
15 research?

16 A. Yes.

17 Q. The next step is going to be  
18 implementation.

19 A. Yes.

20 Q. Again the people involved in the  
21 research and the wildlife biologists and the other  
22 experts who understand the nuances of a landscape  
23 planning system would clearly have some interest in how  
24 any such a program was actually implemented on the  
25 ground?

1 A. Oh, absolutely. And I certainly  
2 support that.

3 Q. And what I am suggesting is that  
4 would you accept that those people could design the  
5 implementation details of such a program and that may  
6 very well change some of the specifics that you have  
7 put in your terms and conditions with respect to  
8 numbers and percentages?

9 A. Yes. I will agree in two related  
10 ways. First of all, one of the things that impressed  
11 me considerably in the Essa procedure was, as was  
12 pointed out before, something like half or more of the  
13 participants were from the Ministry of Natural  
14 Resources, and I have complete confidence in the  
15 ability that there exists the human resources and so on  
16 within the Ministry to do a superb job on this given  
17 the opportunity to do so.

18 The related one is a point I have made a  
19 couple of times that we have to distinguish between two  
20 sets of things we are saying: first is a large  
21 approach towards a sustainable landscape, towards  
22 wildlife being all species and so on, which are fairly  
23 firm. I would have difficulty in seeing those  
24 negotiated away or something of that sort.

25 But there is a second set which are much



1 less firm, the ones we are talking about now, 10 per  
2 cent, 500 per cent, those sorts of things, and I am  
3 confident that those will be changed and that changes  
4 can be made -- if they are made in a reasonable way,  
5 will in fact be made and that can be done in the  
6 implementation phase.

7 Q. And I guess the point I am getting at  
8 in the context of the type of decision that this Board  
9 has to make: Would it be fair to say that what you're  
10 most interested in is the objective of implementation  
11 of landscape planning as opposed to the Board accepting  
12 the particular level of detail that's set out in the  
13 terms and conditions?

14 A. I think that's fair enough to say  
15 within limits. I wouldn't want to give the impression  
16 that putting in these actual numbers was a waste of  
17 time. It was done with all the uncertainties about  
18 them; first of all, to demonstrate that it is perfectly  
19 feasible to define these things in an operational  
20 quantitative way. Whether we have done the right job  
21 of it or not, there is an example of what it might look  
22 like.

23 And, second, to get around the possible  
24 misconception that we have to wait for eight or ten or  
25 twenty years until we have very good numbers for those



1 before starting. We can start with interim ones  
2 immediately in my view.

3 With those provisos, I agree with what  
4 you said.

5 Q. Just to be clear then. Because you  
6 see these numbers in the terms and conditions as a  
7 starting point, they are clearly negotiable?

8 A. Clearly negotiable on the basis of  
9 rational argument and evidence, yes.

10 DR. SUFFLING: A. Could I just add one  
11 point there.

12 If by negotiable you mean that they would  
13 be subject to change and modification because of some  
14 reasonable argument or scientific evidence, that's  
15 fine. You have to then distinguish between a  
16 reasonable guideline, say, limits of 20 and 80 per cent  
17 or whatever it might be, and something else that might  
18 be imposed as a result of a political level of  
19 negotiation and planning.

20 Obviously once in a while society decides  
21 on things which the technician or the so-called expert  
22 would perhaps not agree with. And societal consensus  
23 is different from the dictates of the needs of  
24 wildlife. It says nothing about the wisdom of either  
25 approach.

1 Q. I am building the assumption into my  
2 question that the details of how landscape management  
3 would be implemented would be refined as a result of  
4 the advice of a group similar to the group who got  
5 together to come up with this research proposal.

6 A. Yes. But what I am trying to do is  
7 merely to draw the distinction between some kind of  
8 technical consensus that scientists might reach and the  
9 kind of - let's talk frankly - the kind of horse  
10 trading that goes on in the political context.

11 Q. So with that proviso, you would agree  
12 with Dr. Middleton?

13 A. Yes.

14 MR. MARTEL: Horse trading only goes on  
15 in minority governments. (Laughter)

16 MS. SEABORN: Well, there is a good,  
17 strong majority now, Mr. Martel, so...

18 Q. In light of those answers, Madam  
19 Chairman, I am not sure where we are left with  
20 landscape planning. But maybe I could ask Mr. Lindgren  
21 a question with respect to FFT's position because we  
22 have the witnesses' expert opinion on where we are with  
23 landscape planning, and I would like to know whether  
24 Forests for Tomorrow in light of those answers would be  
25 prepared to amend their terms and conditions to drop

1 some of the detail associated with how landscape  
2 planning could be implemented.

3 MR. LINDGREN: Well, Madam Chair, perhaps  
4 I can respond to that question this way. This panel  
5 has said repeatedly, and again Dr. Middleton has just  
6 repeated it now, that the goal of FFT is to have  
7 landscape planning and management implemented in this  
8 province as soon as possible.

9 And the objective of a landscape approach  
10 is to have zero change from the natural disturbance  
11 regime and that's why Condition 26 says "manage the  
12 landscape in relation to its existing spatial  
13 configuration and occurrence with a view to replicating  
14 pre-existing forest conditions". That's the  
15 fundamental message of this panel. That's the  
16 fundamental bottom line of FFT.

17 Now having said that, this panel has gone  
18 one step further and has attempted to give you an idea  
19 of what the quantifiable and explicit objectives of  
20 landscape management might look like; and Dr. Middleton  
21 has said, for example, we have thrown out figures such  
22 as 500 per cent or 20 per cent, and I think the panel  
23 has readily admitted those figures are not cast in  
24 stone, the figure could be 501 per cent, it could be  
25 499 per cent.

1                   We are quite prepared to leave the  
2 negotiation or the development of those criteria to the  
3 Essa workshop or a similar group like that. Mr. Hanna  
4 yesterday raised questions relating to the monitoring  
5 of compliance with these criteria. Again we are quite  
6 prepared to leave that to negotiation or to further  
7 development in the Essa workshop or some other  
8 exercise.

9                   But having said that, again I would  
10 emphasize the bottom line of FFT and this panel is that  
11 we want landscape management and planning. The details  
12 of implementation, we are quite prepared to talk about.  
13 If someone else has better criteria, we are certainly  
14 prepared to sit down and talk with them about it. But  
15 my message is we need landscape management, and that is  
16 certainly the argument we will be making at the end of  
17 day.

18                   Implementation details we can set aside.

19                   MS. SEABORN: I think that's helpful,  
20 Madam Chair, certainly from my client's perspective as  
21 to where we are on this issue.

22                   In light of Dr. Middleton's answers  
23 yesterday and the number of questions that Mr. Hanna  
24 posed in relation to the exact detail of these terms  
25 and conditions, I had some concerns about where we are



1 in all of this. I think that Mr. Lindgren's position  
2 on the record is helpful and I don't have any more  
3 questions.

4 MADAM CHAIR: Thank you, Ms. Seaborn.

5 MS. SEABORN: Thank you, members of the  
6 panel.

7 MADAM CHAIR: Ms. Blastorah.

8 MS. BLASTORAH: Mrs. Koven, in light of  
9 what's just happened, this clarification from Mr.  
10 Lindgren has also been very helpful to us. And I was  
11 wondering, we certainly will finish this afternoon with  
12 no problem. In fact, if Mr. Freidin and I could have  
13 ten or fifteen minutes, we may be able to reduce the  
14 cross even further as a result of Ms. Seaborn's cross.

15 So if we could have the Board's  
16 indulgence, I think it would shorten the day.

17 MADAM CHAIR: We will take a  
18 fifteen-minute break.

19 ---Recess at 1:32 p.m.

20 ---On resuming at 1:55 p.m.

21 MADAM CHAIR: Please be seated.

22 Ms. Blastorah.

23 MS. BLASTORAH: Thank you very much, Mrs.  
24 Koven. I would like to thank the Board for the break  
25 there.



1                   On the basis of Mr. Lindgren's comments  
2 before the break, we have been able to eliminate some  
3 questions from our cross-examination, and I think that  
4 will speed things along.

5 CROSS-EXAMINATION BY MS. BLASTORAH:

6                   Q. Dr. Middleton, could you turn to the  
7 featured species policy in your source book. If you  
8 don't have it convenient, I do have photocopied copies.

9                   DR. MIDDLETON: A. We have a copy, thank  
10 you.

11                  MADAM CHAIR: Which source book?

12                  MS. BLASTORAH: Number 2. Perhaps it  
13 would be simpler if I just gave the Board two copies.  
14 I photocopied it since it's a little hard to locate in  
15 the source book. I am only going to be making brief  
16 reference to it so I don't think it's important that  
17 everyone else have it. I do have some extra copies  
18 here if anyone else would like one.

19                  MR. CASSIDY: Could I have one? I have  
20 one. I just don't have it committed to memory.

21                  MS. BLASTORAH: I neglected to indicate  
22 before I begin that I do have two packages of  
23 interrogatories. Perhaps I could just mark those first  
24 and get them out of the road.

25                  I will be filing MNR interrogatories No.

1 A. We had a mis-numbering problem in our package, so  
2 we have an A, 1, 8, 10, 20, 21, 27, 39, and 58.

3 And we are filing a second package of  
4 interrogatories which are interrogatories filed on  
5 behalf of the Ontario Federation of Anglers and  
6 Hunters. And they are OFAH, No. 6, 11, 13, 14, 24, 34,  
7 and 59.

8 MADAM CHAIR: Do you want the same  
9 exhibit number?

10 MS. BLASTORAH: Maybe you can make them A  
11 and B, that, might be simplest.

12 MADAM CHAIR: Okay. The MNR  
13 interrogatories for Forests for Tomorrow Panel 9 will  
14 be 1749.

15 MS. BLASTORAH: I'm sorry, what was that  
16 number?

17 MADAM CHAIR: 1749A.

18 And the OFAH interrogatories will be  
19 Exhibit 1749B.

20 ---EXHIBIT NO. 1749A: MNR interrogatories for Forests  
21 for Tomorrow Panel 9

22 ---EXHIBIT NO. 1749B: Interrogatories filed on behalf  
of OFAH.

23 MS. BLASTORAH: It has just been brought  
24 to my attention that my list showed OFAH Interrogatory  
25 No. 59. That was the page reference in the

1 interrogatory. It is No. 44.

2 Q. Dr. Middleton, I would like to begin  
3 with you. My first question relates to the featured  
4 species policy. If you would turn to page 2 of that  
5 document, I would just ask you to confirm that that  
6 policy makes threatened and endangered species  
7 provincially featured species in the province?

8 It's the first full paragraph. Indicates  
9 that in Ontario selected species of animals are  
10 designated as provincially featured species. These are  
11 threatened or endangered species: White-tailed deer  
12 and moose.

13 DR. MIDDLETON: A. That's correct.

14 Q. This policy doesn't deal with rare  
15 species; correct?

16 A. Yes.

17 Q. For purposes of your answer, however,  
18 to one of the questions - I can't recall now whether it  
19 was in direct or cross - but during your evidence, you  
20 commented at one point that for purposes of what you  
21 were saying "Rare" was equivalent to "Vulnerable". I  
22 think I understood you correctly.

23 A. To all intents and purposes in the  
24 context, yes.

25 Q. And based on that comment, I just

1 wanted to clarify one thing then. I have another  
2 exhibit, an existing exhibit, that I will give you and  
3 I am only going to refer to it briefly. I think you  
4 have it. It is Exhibit 308.

5 A. Yes.

6 Q. I have copies for the Board since I  
7 didn't have an opportunity to advise Mr. Pascoe we  
8 would be referring to this. And I have some copies for  
9 the parties.

10 If you could turn to page 5 of that  
11 document, please. At page 5 are set out the COSEWIC  
12 categories as of 1988, and you will see the first one  
13 there is listed as "Vulnerable"?

14 A. That's correct.

15 Q. And there is a footnote to that  
16 definition which reads that:

17 "COSEWIC adopted the term 'Vulnerable'  
18 in April 1988 to replace the term 'Rare'.  
19 The Rare category will be deleted by  
20 COSEWIC after previous Rare designations  
21 have been reassessed. However, Ontario  
22 will continue to use the term 'Rare' as  
23 Ontario interprets the new COSEWIC term  
24 'Vulnerable' as simply a finer  
25 subdivision of the term 'Threatened'."

1                   Now if we all follow through that, I  
2 would just like to connect that back to the featured  
3 species policy and clarify or get your agreement that  
4 to the extent Ontario considers COSEWIC designations of  
5 "Vulnerable" as incorporated under "Threatened", they  
6 would then fall under this policy we have just been  
7 discussing, the feature species policy, insofar as they  
8 would be considered threatened or endangered and thus  
9 provincially featured.

10                   A. Yes, I do follow that, believe it or  
11 not.

12                   Q. It's rather Byzantine logic.

13                   Do you agree with it? You followed it.  
14 Do you agree that that would be the case?

15                   A. Whether I agree with the logic for  
16 making the distinction between the MNR and the COSEWIC,  
17 I won't comment on it. I follow the logic that one  
18 category being nestled within the other is that the  
19 Vulnerable one does show up in the --

20                   Q. And just for the sake of clarity,  
21 what I am asking you to agree to is that to the extent  
22 that Ontario -- on the face of these documents, Ontario  
23 has said that they will treat COSEWIC designations as  
24 Threatened. You will agree with that, that's what the  
25 document says?



1 A. I will.

2 Q. And therefore to the extent that  
3 those Vulnerable categories become threatened for  
4 purposes of Ontario, they would then be caught by the  
5 policy?

6 A. I understand and agree with that,  
7 yes.

8 Q. Okay. Thank you. Now I would just  
9 like to clarify the definitions "Vulnerable" and  
10 "Threatened". And if you will turn over -- well,  
11 perhaps if you could just stay on the page for a  
12 moment.

13 You will note that the definition of  
14 "Vulnerable" which replaces "Rare" for the purposes of  
15 COSEWIC does not include any element of -- or it does,  
16 rather, include the element of declining numbers.  
17 If you will see the third line of the definition: "Any  
18 indigenous species of fauna or flora that is  
19 particularly at risk because of low or declining  
20 numbers..." and then it goes on.

21 A. Low or declining numbers, yes.

22 Q. So it does include in that definition  
23 the concept of declining numbers?

24 A. Yes.

25 Q. If you turn over to page 6 of Exhibit

1 308.

2 A. Yes,

3 Q. The definition that Ontario uses --  
4 the definitions, rather, are set out there and you will  
5 see the first one is "Rare".

6 A. Yes.

7 Q. And again the same footnote is  
8 appended to "Rare" and it indicates that COSEWIC has  
9 adopted the term "Vulnerable" to replace "Rare" and so  
10 on, and the same explanation is given.

11 And I would just like to review this  
12 definition of Rare and ask you to agree that this  
13 definition does not include the concept of declining  
14 numbers or threatened with extinction?

15 A. Not explicitly, no.

16 Q. So that there is a distinction then  
17 between COSEWIC's category of Vulnerable, which Ontario  
18 treats as Threatened, in that it has an aspect of  
19 decline, whereas this category of Rare does not?

20 A. Except for the possible decline  
21 mentioned at the end, right. But I take the point.

22 MR. MARTEL: Would it not be wise in your  
23 opinion that we have some consistency in something in  
24 the Ministry of Natural Resources?

25 DR. MIDDLETON: In my opinion having some

1 consistency is always a good thing unless there is a  
2 good reason not to.

3 MS. BLASTORAH: You may recall, Mr.  
4 Martel, and I won't go into it now because there is  
5 evidence before the Board, there was some discussion of  
6 this at the time that Exhibit 308 was filed and I think  
7 Mr. McNicol attempted to give his explanation of why  
8 there was a distinction and so on. We won't go through  
9 that again today.

10 MR. MARTEL: But you can imagine the  
11 public dealing with your definition, with COSEWIC's  
12 definition, with another definition. Everybody has got  
13 their own, I think it's like multiple use, and you pick  
14 the one you want to use the most at any given time.  
15 And it just adds to the confusion in the public's mind.

16 MS. BLASTORAH: Q. I would just like to  
17 come back to the definitions that we do have here and  
18 the distinction. Dr. Suffling, in some  
19 cross-examination I believe by Mr. Hanna gave or made  
20 reference to a situation - I can't remember where, it  
21 was around Windsor I believe, Dr. Suffling --

22 DR. SUFFLING: A. Right.

23 Q. You made reference to an experience  
24 that you'd had where there had been, as I understood  
25 your comment, some public outcry as a result of a

1       perceived threat to a certain type of snake--

2                   A.   Yes.

3                   Q.   --that was considered rare in  
4       Ontario.

5                   And I believe your point at the time was  
6       that the species was relatively common in Michigan and  
7       that it was merely the placement of an administrative  
8       boundary, i.e, the Ontario/Michigan border that caused  
9       it to have the designation of "Rare" in Ontario. In  
10      other words, that administrative boundary cut across  
11      its range and it was only the upper part of its range  
12      that fell into the Ontario jurisdiction and therefore  
13      the species became "Rare" in Ontario?

14                  A.   Yes. That's basically true. There  
15      is one sort of factor that needs adding to that and  
16      that is that as Canadians or Ontarios, we have a sense  
17      of, I hope we have a sense of cultural identity of who  
18      we are and where we live and what we live among.

19                  And so to the extent that many people in  
20      Ontario care about wildlife and so on, that snake or  
21      something like a bald eagle or whatever, it has a  
22      cultural identity and that's real, even though the  
23      boundary placement is perhaps a little artificial.

24                  Q.   Leaving aside that consideration  
25      then, I would just ask you to agree, Dr. Middleton and

1 Dr. Suffling, whoever wishes to comment on this, that  
2 there is a distinction between a situation like that  
3 where you have a species that has a designation of  
4 "Rare" notwithstanding the fact that it's relatively  
5 common over its range and species which are considered  
6 "Vulnerable" under the COSEWIC definition and  
7 "Threatened" under the Ontario definition because of  
8 the fact that they are in decline in their numbers.

9 DR. MIDDLETON: A. There will certainly  
10 be a distinction in some circumstances, probably most.

11 Q. And that would be a distinction then  
12 that would be something to be taken into account in  
13 deciding how to treat those particular or individual  
14 species in a management context?

15 A. I think that's a relevant thing to  
16 take into account. It won't always lead to a  
17 difference in what one does with the two categories but  
18 it should be considered.

19 Q. Thank you. Now I would just like to  
20 go back to a few matters that came up this morning  
21 during Mr. Hanna's cross-examination and specifically  
22 in relation to the panel's answer to the undertaking  
23 that you gave to Mr. Hanna in relation to rare,  
24 threatened and endangered species, which -- and as I  
25 recall, his question was, which are threatened or in



1 decline as a result of timber management activities in  
2 Ontario. And I just would like to clarify a couple of  
3 questions that came out of that.

4 Dr. Bendell, you gave quite a long list  
5 in fulfilment of that undertaking, and I took it from  
6 your comments at the time, although I just want to  
7 clarify, that the list you were providing was in fact a  
8 list of species common in the boreal forest, species  
9 that live in the boreal forest, and I took your comment  
10 to be that you couldn't say for a fact that they were  
11 in decline as a result of timber management.

12 DR. BENDELL: A. No... Let me look at  
13 this. In contrary, what I did try to do here was to  
14 list species that were indeed in these categories that  
15 could be, I think, fairly reasonably attributed to  
16 timber management.

17 Q. Perhaps that's where we are differing  
18 then.

19 A. That's right.

20 Q. You are saying they could be and I'm  
21 saying they are, and I just want to clarify that point.  
22 It's my understanding - and correct me if I am wrong -  
23 my understanding of your comments at the time was that  
24 your point was they are in the forest -- these species  
25 live in the forest, timber management is going on in

1 the forest, and they may well be impacted?

2 A. Right.

3 Q. But I didn't take you to be in a  
4 position to say that they were in fact in decline  
5 primarily as a result of timber management.

6 A. Well, again, you see that's based on  
7 how firmly you want to come down given the evidence  
8 that is available. And if I wanted to imagine the sort  
9 of worst case, I would say, well, these are good  
10 examples of ones that are indeed in the state they are  
11 because of some aspect of logging practice. That was  
12 my intention.

13 Q. Would it be fair to say then that  
14 you're not in a position to comment whether those  
15 species are in decline largely because of timber  
16 management or the degree to which timber management may  
17 or may not have contributed to their decline, although  
18 it may well have been a factor?

19 A. That's right. I would prefer to be  
20 moderately assertive about it.

21 Q. Thank you. And, Dr. Suffling, also I  
22 believe it was in relation to that same undertaking,  
23 you raised an article I think by a Mr. Tamm or Ms.  
24 Tamm, I have no idea.

25 A. Yes, the Swedish one.

1 Q. Exhibit 1746, the Swedish article.

2 And in discussing that, you indicated  
3 that the particular boreal species which are found in  
4 the Swedish boreal forest discussed in that article  
5 would not be found or would not necessarily be found in  
6 the Ontario boreal forest, but analagous species would  
7 be found here. Did I take your point correctly?

8 DR. SUFFLING: A. Yes. Not in every  
9 case but in many cases, there will be what biologists  
10 would call a sibling species. It looks very much the  
11 same, it's closely related, and it does the same job in  
12 a different ecosystem.

13 Q. And I took it it was on that basis  
14 that you were saying that you felt some confidence in  
15 extrapolating the comments in that article to the  
16 Ontario situation?

17 A. Within reason.

18 Q. Within reason.

19 A. Obviously I made the caveat that land  
20 use differs somewhat in Sweden to Canada.

21 Q. And that's what I wanted to clarify.  
22 Would you include in that when you said land use  
23 differs, would you include in that timber management  
24 practices? It may well be that there are  
25 differences --

1 A. Oh, there are differences, yes.

2 Q. Thank you.

3 A. Some of the allusions in the article  
4 are to clearcuts, for instance, and they are talking  
5 about the effects of clearcutting. But a clearcut in  
6 Sweden may be a somewhat different beast than what's in  
7 Ontario.

8 Q. Thank you. That's what I wanted to  
9 clarify.

10 And one other item of clarification  
11 again, Dr. Bendell. Referring to your study that's  
12 presented in the witness statement, and that was  
13 carried out in the Gogama area, I understand?

14 A. Correct.

15 Q. Now the study area for that  
16 particular research project, as I understand it, was a  
17 jack pine plantation?

18 A. One element of it was a jack pine  
19 plantation.

20 Q. I see.

21 A. The other elements were a burn or a  
22 recent burn, for example, that's the beginning of the  
23 shrub habitat and so on. There were other what I would  
24 call forest stand types.

25 Q. I see. I just wanted to clarify that

1 first of all; and, secondly, can you confirm for me  
2 that moose is a featured species in Gogama district?

3 A. Indeed.

4 Q. It is. So there is moose management  
5 going on in the Gogama district?

6 A. Indeed.

7 Q. Now I wanted to clarify one thing  
8 that sort of came up a number of times in your evidence  
9 and that was your interpretation of Dr. Euler's  
10 comments in relation to jack pine. And I just would  
11 like to refer you -- do you have a copy of the moose  
12 habitat guidelines?

13 A. No, I don't, but I am familiar with  
14 it. Go ahead, yes.

15 Q. You are familiar with it?

16 A. Yes.

17 Q. Perhaps I could just give this to Mr.  
18 Lindgren to put in front of you. I have marked two  
19 particular places there in pink on pages 3 and 4 of the  
20 guideline. I don't think it's necessary to refer to  
21 it, although in fairness to the witness I think he  
22 should have it in front of him.

23 I would just ask you to confirm that the  
24 moose guidelines in fact speak to conifer and that  
25 conifer would include jack pine?



1                   A. Well, if you look at the perception  
2 about conifer and so on, conifer by and large means  
3 black spruce and in terms of the moose guideline and  
4 what is managed for in much respect over the moose  
5 distribution.

6                   And I also go back to Dr. Euler's -- I  
7 have been through his excellent testimony and I find  
8 where he talks about what would happen if this or that  
9 type of conifer would burn, and I think there is the  
10 clear indication there that if jack pine were burned,  
11 it wouldn't be of much consequence because it is not  
12 moose habitat.

13                  Q. I would like to clarify a couple of  
14 things arising from your answer then. First of all,  
15 you said that conifer is - and I didn't get your exact  
16 words - is generally considered not to include...

17                  A. Well, in the Gogama area, black  
18 spruce is -- and over much of the moose range, black  
19 spruce, I I would say by and large is the conifer of  
20 choice.

21                  Q. And that's notwithstanding the fact  
22 that you have just confirmed for me that Gogama does  
23 manage for moose--

24                  A. Oh, indeed.

25                  Q. --and there are jack pine

1. plantations?

2                   A. That's right, that's right. And I  
3 think that when the guidelines are in operation, then  
4 black spruce, such as it is, receives the appropriate  
5 treatment.

6                   But in terms of jack pine, even locally  
7 because of the emphasis, it is written off as a poor  
8 habitat; and therefore in terms of what is done with  
9 wildlife, it is really of little consequence.

10                  Q. Is it fair to say that's your  
11 interpretation of how Gogama is applying the  
12 guidelines?

13                  A. I could go on -- my interpretation?

14                  Q. Yes. I mean you are not  
15 participating in the management, the development of  
16 those plans, so to that extent you are interpreting  
17 what is going through the mind of the planner.

18                  A. I see the plans. I read the plans.  
19 And I read the attitude towards the various forest  
20 components in that area.

21                  Q. Well, perhaps I could refer you then  
22 to one of the interrogatories in the interrogatory  
23 package we have just filed, Exhibit 1749B, which is  
24 OFAH interrogatory No. 24. We will provide you with a  
25 copy of it if it is more convenient. It's No. 24, Dr.

1 Bendell.

2 A. Yes, fair enough.

3 Q. Now in that question we refer to your  
4 statement on page 16 of the witness statement in  
5 paragraph 1 where you say "by adding pine to the  
6 landscape, the numbers of species of wildlife and their  
7 abundance are increased over spruce or shrub habitat".

8 A. That's right.

9 Q. And we asked you in relation to that  
10 statement, is the witness suggesting that areas  
11 formally -- I think that should be formerly -  
12 comprising pine stands have been converted to other  
13 stand types in order to accommodate the moose habitat  
14 guidelines? And your answer was "no".

15 A. That's right.

16 Q. So you are not suggesting that in  
17 applying them -- in any event in applying the moose  
18 habitat guidelines in Gogama, they are managing against  
19 jack pine by converting to spruce?

20 A. Well, I would have to think about  
21 exactly what is being done.

22 Q. Well, let me put it this way to you.  
23 If someone from the Ministry of Natural Resources in  
24 Gogama district, a biologist came forward and said in  
25 applying the moose habitat guidelines, we are not

1 attempting to eliminate or reduce jack pine, would you  
2 agree with me you wouldn't be in any position to refute  
3 that statement or contradict him or her?

4 A. I think there is action under way to  
5 convert jack pine into different types of spruce, white  
6 or black spruce.

7 Q. And that's your impression?

8 A. Yes, that's right.

9 Q. And it's on that basis that you say  
10 that there is --

11 A. Oh, whatever. I don't know what  
12 their decision is. But I mean there is stand  
13 conversion going on in that area. Now, exactly what's  
14 behind that, I am not prepared to say.

15 Q. So you are not in a position to say  
16 why that is being done?

17 A. No, that's right.

18 Q. Now just in light of that. If Dr.  
19 Euler's statements - and I think you referred to his  
20 comments in relation to ideal moose habitat as a  
21 prescription. Am I quoting you correctly?

22 A. Yes.

23 Q. You referred to it as a prescription  
24 a number of times.

25 If his statement was intended not as a

1 prescription, but rather a description of conclusions  
2 drawn from a particular piece of research in relation  
3 to what is good habitat for moose, would you agree with  
4 me that his comments shouldn't be interpreted as  
5 discriminating against jack pine?

6 A. Yes, certainly.

7 Q. Thank you.

8 And Dr. Suffling, I would like to come  
9 back to you for a moment. You said at the outset that  
10 you wanted to challenge Dr. Euler's or what you  
11 perceive to be Dr. Euler's dismissal of diversity. I  
12 think that's what you said?

13 A. Yes.

14 Q. Now, I understand you know Dr. Euler  
15 from the Essa workshops--

16 A. A little bit, yes.

17 Q. --that produced the 1990 and 1991  
18 reports?

19 Dr. Middleton commented in discussing the  
20 Essa workshops that you have both been involved in that  
21 he was very impressed with the amount of consensus and  
22 the openness and the extent to which the participants,  
23 including the ministry participants, were very much of  
24 the same mind in his view. Would you agree with that?

25 A. Would I agree that...?



1 Q. Generally speaking.

2 A. A statement was made to that effect,  
3 yes.

4 Q. That Dr. Middleton said that.

5 Do you agree that generally there was a  
6 lot of consensus at the workshop?

7 A. Well, obviously there wasn't complete  
8 agreement amongst everybody about everything, but, yes,  
9 there was a lot of consensus.

10 Q. I would just like to ask you then:  
11 Is it your opinion that Dr. Euler, who was a  
12 participant at those workshops, does not believe in the  
13 value of diversity across the landscape?

14 A. Oh, no, I got the impression at the  
15 workshop - you are putting me on the spot here a little  
16 bit - but I got the impression - and only Dr. Euler can  
17 confirm or deny this - that he was quite keen about the  
18 ecosystem approach as an individual, as an individual  
19 scientist in the group.

20 Q. And in fact he is listed as one of  
21 the authors of the 1991 Essa report that has been filed  
22 as an exhibit?

23 A. I believe so, yes. I would have to  
24 confirm that, but I think he is. Yes.

25 Q. So, to the extent at the outset, and

1 this is what I wanted to clarify, that you said you  
2 wanted to challenge what you perceived to be his  
3 dismissal of diversity, you can see where that might be  
4 taken out of context?

5 A. Yes. The reason why I did this was  
6 because there was a very strong statement here in the  
7 transcript. And Dr. Euler had in fact over a number of  
8 pages of transcript, which I can't recall chapter and  
9 verse right now, he had made a very strong argument at  
10 that particular time for habitat supply analysis.

11 And as I understood it at that time  
12 anyway and maybe now that was the Ministry's official  
13 approach to the problem or the -- let's not call it the  
14 problem, to this task, this need. That was their  
15 response.

16 Q. You just said - and obviously you  
17 don't have the transcript in front of you - you said  
18 habitat supply analysis. Did you intend to say  
19 featured species? I believe that's --

20 A. I'm sorry. I meant to say featured  
21 species.

22 Q. I just wanted to clarify that.

23 A. It was a slip of the tongue.

24 Q. Perhaps to help clarify this, I  
25 understand now it is based -- or am I correct it is

1 based on your reading of the transcript without  
2 obviously having been at the hearing that you took  
3 those comments to mean --

4 A. Yes, I read a number of pages of  
5 transcript, maybe 20 or 30 pages of transcript, in that  
6 particular session and I drew that conclusion from the  
7 transcript, but I was not at the hearing.

8 Q. And would you agree then that given  
9 Dr. Euler's, as you've said, apparent keenness on  
10 diversity now, that there might be some basis on which  
11 he was making those statements that you are unaware of  
12 or perhaps some other interpretation could be put on  
13 his words than the one you have put on it?

14 A. I am very reluctant to try and climb  
15 inside his mind and tell you what he's thinking. I  
16 think you would really have to ask him about that. My  
17 interpretation of what is going on is that Dr. Euler  
18 has some strong feeling that on occasion a featured  
19 species approach is very good one to use.

20 Without any way of disqualifying that  
21 approach, he also seems to be of the opinion that the  
22 other approach, the ecosystem approach, is very  
23 powerful in many instances.

24 Now when he stands up in a scientific  
25 meeting and he voices an opinion as Dr. Euler, then he

1 talks on behalf of himself. When he stands up here, he  
2 is representing the Ministry and quite properly he  
3 tells you what the party line is, and I don't see any  
4 inherent contradiction in that.

5 MADAM CHAIR: Ms. Blastorah, are you  
6 going to short-circuit this by giving Dr. Suffling  
7 specifically what Dr. Euler said because the Board's  
8 remembrance of the long discussion of Dr. Euler's  
9 position was that in fact internationally everybody is  
10 moving beyond the featured species towards  
11 multi-indicator and beyond into something much larger.  
12 And that's what the Board recalls from Dr. Euler's  
13 testimony.

14 MS. BLASTORAH: I don't want to drag this  
15 out and I was --

16 MADAM CHAIR: Because we don't see any  
17 need to stay on this point.

18 MR. MARTEL: It was his continuum I think  
19 is the word he used.

20 MS. BLASTORAH: And perhaps I can just --  
21 I'm merely trying to clarify because I think the  
22 concern was, in all fairness, that Dr. Suffling made a  
23 fairly strong statement at the outset and we are just  
24 attempting to clarify that. And I think he has  
25 attempted to indicate the context in which he was



1 making that statement and he has agreed Dr. Euler is  
2 not, based on his experience, contrary to the  
3 diversion.

4 MADAM CHAIR: Mr. Lindgren?

5 MR. LINDGREN: Madam Chair, I'm hesitant  
6 to interrupt my friend's cross-examination, but it  
7 might be possible to short-circuit this  
8 cross-examination even further.

9 We have all attempted now to read Dr.  
10 Euler's mind and apparently Dr. Euler at least is keen  
11 or enthusiastic about the landscape management approach  
12 and that's all very well and good, but can we please  
13 have the Ministry position on this.

14 MS. BLASTORAH: Perhaps I can  
15 short-circuit this. I think the point has been made.  
16 At the time you interrupted me, Mrs. Kovan, I was about  
17 to move on and I just didn't want to be unfair to the  
18 witness. I was letting him finish his answer. But I  
19 think we can leave it. I just wanted to clarify the  
20 understanding on which he was making that  
21 interpretation of Dr. Euler's. That's all.

22 Q. Now, moving on to the criteria set  
23 out in your witness statement for interim landscape  
24 management, if I can use that term, and these are the  
25 criteria on page 64. Again I would just like to



1 confirm a couple of things in relation to your  
2 cross-examination by Mr. Hanna.

3 He went through quite a lengthy  
4 discussion with you in relation to these particular  
5 criteria that you have set out here and he went through  
6 them one by one. And my understanding was that when he  
7 got to your criteria 5 and 6 as listed here, you  
8 indicated that for those two criteria it would not be  
9 possible to do those, to implement those in any  
10 operational way without a GIS. Did I understand you  
11 correctly?

12 DR. SUFFLING: A. I would have to -- I  
13 could agree with you generally, but I would have to  
14 qualify that. If you were working in a system where no  
15 GIS was available, you would still be able to use this  
16 criteria. What would happen is that you would have to  
17 sample the landscape. You would have to go out and  
18 look at representative plots, albeit very large ones,  
19 of perhaps one or five kilometres across. And you  
20 would measure these parameters for samples. And then  
21 ensure that the samples were representative of the  
22 whole.

23 Now if you have a GIS system and it's  
24 covering the whole landscape and it is being used for  
25 all sorts of other silvicultural purposes and other

1 elementary purposes, then the possibility exists to do  
2 this comprehensive thing for the whole land base, for a  
3 whole management unit.

4 Q. And when you say sample, what would  
5 you be looking at? Would you be looking at the --

6 A. In the case of those two parameters?  
7 Well, you would be measuring, you would be measuring  
8 separation distances between patches within the  
9 samples--

10 Q. And perhaps my question--

11 A. --in the first case.

12 Q. --wasn't clear. Am I correct that  
13 without a GIS, the best approximation would be based on  
14 vegetative cover in each class; in other words, you  
15 would have to use an FRI map or something. You  
16 couldn't...

17 A. Well, the GIS is a tool for  
18 manipulating information. And you could have various  
19 kinds of data stuffed into the GIS system and, you  
20 know, I can make you a bologne sandwich or a ham  
21 sandwich, depending on what you give me to work with,  
22 but either way it's a sandwich, but the result is quite  
23 different.

24 Q. And the reason I was a little  
25 confused was because it says in the FFT terms and

1 conditions in relation to this that these criteria or  
2 the equivalent of these criteria are to be applied to  
3 the landscape unit. And you have in answers to  
4 interrogatories and I believe in cross-examination by  
5 Mr. Hanna, you have indicated that included in your  
6 concept of landscape unit are structure -- is the  
7 concept of structure.

8 A. Vertical structure.

9 Q. Vertical structure.

10 A. Yes, if at all possible.

11 Q. Yes, and I was just a little confused  
12 how you would do that, how you would introduce that  
13 element into your calculation without the availability  
14 of a GIS.

15 A. Again, the provision--

16 Q. And this is again operational.

17 A. --of the GIS system or the lack of  
18 the GIS system is quite independent of the availability  
19 of that structural information.

20 Q. In what form would you find that that  
21 would be available to you to implement operationally?  
22 That was the entire context of this series of  
23 questions. Do this on an operational basis.

24 A. I am not sure I quite follow you.

25 You I see I think we are misunderstanding each other a

1 little bit.

2 First of all, one has a source of data  
3 and the data and the data can be crude or  
4 sophisticated. Now depending on whether the data are  
5 crude or sophisticated, you could do more or less with  
6 them. When you've got the data, then you have to  
7 summarize those statistically with parameters of this  
8 kind.

9 Now, in two cases, 5 and 6, the GIS  
10 system will be enormously valuable in making that  
11 summary in making the measurements. Not absolutely  
12 essential in the sense that one could do it by hand,  
13 the samples. But you see my point that you can have  
14 better or poorer data. And then you can have or you  
15 cannot have a GIS system and the two things are not  
16 inherently linked to each other. They obviously help  
17 each other, but --

18 Q. I appreciate what you're saying and I  
19 guess just to clarify. The point of my confusion was I  
20 didn't really see where in an operational sense the  
21 data would come from in terms of structural data in  
22 relation to that structural element?

23 A. I see what you mean. I think you  
24 will find if you look in the Essa document, it may or  
25 may not be there in chapter or verse but it was



1 certainly in the discussion at the Essa meeting, there  
2 would be two approaches to this.

3 One is to use a true FEC approach and a  
4 lot of the time have people go out on the land and  
5 actually observe or measure things.

6 There is another approach which began to  
7 be called a psuedo-FEC system - is that what they were  
8 saying? - where one would take categories like the FRI  
9 categories. And from the age and species composition  
10 that was put down in an FRI patch on the map, one would  
11 be able to infer to some extent what the structure  
12 would be, what else would be there. Because whether or  
13 not one could do that accurately would have to be  
14 tested --

15 Q. And both of those would involve  
16 extensive ground sampling given that the FEC is not  
17 mapped at the present time?

18 A. You can't measure anything on the  
19 ground from air photos without doing ground truthing of  
20 some kind, with very crude exceptions. I mean you can  
21 recognize a road or a lake.

22 Q. So to the extent that ground truthing  
23 and that kind of sampling is involved, it would  
24 certainly be a much more arduous and time-consuming  
25 task than it would be if you had a GIS in place?



1                   A. No. Ground truthing has nothing to  
2 do with GIS at all.

3                   Q. No, I'm sorry, perhaps we are talking  
4 at odds here again. You indicated that a GIS would  
5 make it much quicker to sum data?

6                   A. To manipulate data--

7                   Q. To manipulate data.

8                   A. --that you already have.

9                   Q. And I was talking about how you would  
10 get the data in the first place, and you indicated that  
11 you would get it by using FEC or a pseudo-FEC and you  
12 indicated -- I understood you to indicate that in both  
13 of those cases you would have to do some ground  
14 sampling in order to get the data. It's not a question  
15 of manipulation; but in order to get the data to  
16 manipulate, it would involve ground sampling?

17                  A. Just as it does with the FRI system.  
18 Every so many stands, they are supposed to do a ground  
19 sample, a transect on ground.

20                  Q. Thank you. I just wanted to clarify  
21 that.

22                  You will forgive me, I have taken out  
23 quite a lot of questions. I am just sort of flipping  
24 through.

25                  I just did have a few questions in

1 relation to the Hydro example that you used during your  
2 evidence in chief. And I believe it was you, Dr.  
3 Suffling, that was discussing the Hydro example; it may  
4 have been Dr. Middleton.

5 DR. SUFFLING: A. That was these two  
6 maps here?

7 Q. Yes, it was.

8 And I believe it may have been Dr.  
9 Middleton generally but I'll leave it to you two  
10 gentlemen to sort out who wants to answer these  
11 questions.

12 I took it from your statement on page 37  
13 of the witness statement, if you wish to turn to that.  
14 On page 37 you state, and I believe this is Dr.  
15 Middleton's evidence?

16 DR. MIDDLETON: A. Yes, that's correct.

17 Q. There is a comment in the last full  
18 sentence at the bottom of page 37 that reads:

19 Ontario Hydro's system could not be  
20 used directly for forest management since  
21 it was set up for different purposes.  
22 However, it does demonstrate that an  
23 appropriate system could easily be  
24 developed with existing technology.

25 A. Yes.

1 Q. And I understood that your  
2 presentation of the Hydro model or the maps that you  
3 have put forward here are to demonstrate how Hydro is  
4 approaching this for their purposes in terms of  
5 placement of transmission corridors. Did I understand  
6 the intent correctly?

7 A. These maps come from Ontario Hydro's  
8 system which is set up for that purpose, that's  
9 correct.

10 Q. And you will agree with me that when  
11 Hydro is placing corridors and those corridors are  
12 cleared, it is not generally intended that they will be  
13 reforested?

14 A. That's correct.

15 Q. In fact quite the contrary. There is  
16 often brush control and so on to keep them cleared?

17 DR. SUFFLING: A. More or less.

18 Q. Thank you.

19 A. Now to that extent, will you agree  
20 that the Hydro analysis that is using this information  
21 is less complex than the kind of analysis that is  
22 outlined in Appendix 1 to the witness statement,  
23 starting on page 63, insofar as they would be looking  
24 at a point in time and the impact at a point in time  
25 rather than impacts over a mosaic over time?

1 DR. MIDDLETON: A. No, I disagree  
2 definitely with that. In my witness statement I made  
3 reference to a number of Ontario Hydro reports from,  
4 specifically from the land use and environmental  
5 planning section of Hydro. They have a very active  
6 program to do basic ecological research on things such  
7 as the impact of a Hydro corridor here on the long-term  
8 status of breeding bird populations on a landscape  
9 basis; some of the best work in this field that I'm  
10 aware of. Virtually all the parameters in those  
11 analyses are precisely of the kinds that we are talking  
12 about, separation size, interior... Those are a very  
13 close analogy to the kinds of work that we are looking  
14 for.

15 Q. Just a couple of questions on that  
16 then. I think you have already indicated that Hydro is  
17 essentially looking at this for the purposes of effects  
18 on birds?

19 A. They are using birds as their first  
20 approach at the problem. Actually they have got a  
21 number of other studies under way with other groups,  
22 including plants and so on.

23 The main criterion in choosing a group  
24 was the availability of the data and things like the  
25 Argus and White papers that we've seen, and the Ontario

1 Breeding Bird Atlas. Since they are there, they can be  
2 used now to begin to look at these ideas, just as the  
3 way we have said we would start with the things that  
4 are available now, the thin end of the wedge if you  
5 would look, but their goal is eventually to have this  
6 as an understanding of biological responses in general.

7 DR. SUFFLING: A. Could I just clarify  
8 that. There is a point that could be raised here that  
9 maybe would help to curtail the questioning.

10 Dr. Middleton's statement here on the  
11 bottom of page 37 was probably written some time around  
12 October?

13 DR. MIDDLETON: A. Sorry, I don't know.

14 DR. SUFFLING: A. Whenever, in the  
15 autumn.

16 Now these maps were released, I think  
17 early in January, and we received them only a few days  
18 ago.

19 Q. This is January of 1991?

20 A. January of this year.

21 And frankly this may be my fault, but I  
22 was not aware that they were doing work that was quite  
23 as sophisticated as this, even as we wrote these  
24 statements in the fall. So we are dealing with a very  
25 fluid situation here.



1 Q. So this is a quickly developing --  
2 this is something that Hydro is still developing?

3 A. They are just galloping along.

4 Q. And I believe they have also been  
5 working in this area attempting to develop the tools  
6 and so on for many years?

7 DR. MIDDLETON: A. That's right. I  
8 don't have it here but the document we put in says  
9 something like 1970-odds this program has been in  
10 place.

11 Q. And it is my understanding -- and I  
12 would just like to clarify this because one of the  
13 comments you made in direct related to some work that  
14 was going on in Northern Ontario. It is my  
15 understanding that this system using these kind of maps  
16 operationally for the placement of Hydro corridors is  
17 only being used in the way you have described, Dr.  
18 Middleton, in terms of patch to patch separation and so  
19 on in Southern Ontario?

20 A. No, that's incorrect. The major  
21 document that I am aware of coming out of Ontario  
22 Hydro - I have got copies here if you think it's  
23 necessary - is something like a 600-page research  
24 report. It puts in place in fact three different  
25 protocols for addressing the question.

1                   One specifically for Northern Ontario  
2       where the pattern of the landscape, especially what the  
3       patches are and what the gaps are, is different from  
4       that in the south, so this has been something which has  
5       been explicitly in place in their thinking for quite a  
6       long time.

7                   Q. I just would like to clarify that.  
8       You have some familiarity with the report, do you?

9                   A. Yes, I do.

10                  Q. The 600-page report.

11                  Well, perhaps you can clarify for me that  
12       it was my understanding from that report that the work  
13       that is being done in Northern Ontario is essentially  
14       of a somewhat - I believe you indicated yourself - a  
15       research nature rather than operational. And in fact  
16       the work that has been done is essentially to determine  
17       the extent to which Landsat imagery can be used with  
18       GIS/FRI maps, what kind of correlation can be drawn  
19       between those, and it's not being used operationally in  
20       the way that it is in Southern Ontario?

21                  A. No, I have to disagree again. When I  
22       had a tour through the Ontario Hydro facilities a  
23       couple of months ago, the single major thing that they  
24       were working on was design of corridors for new Hydro  
25       corridors through northern Ontario, almost literally

1 from the Manitoba border to I believe it was Sault Ste.  
2 Marie or somewhere in that area.

3 This is the main tool, as I understood  
4 from that meeting, that they are using at the moment  
5 for preparing their position for their Environmental  
6 Assessment of the Northern Ontario routes. It's a  
7 day-to-day operational use as the single major tool  
8 they have available. It has gone far beyond research.

9 MADAM CHAIR: Dr. Middleton, are you  
10 suggesting that Hydro, and heaven knows, we know what a  
11 large and powerful organization Hydro is, are you  
12 saying they have better information about the land base  
13 than the Ministry of Natural Resources?

14 DR. MIDDLETON: I shall be careful.

15 MADAM CHAIR: Or are they in fact limited  
16 by the information they can obtain from the Ministry as  
17 to what goes into their system? It would be hard to  
18 believe that they would have generated more information  
19 about the land base than the government agency in  
20 charge of managing the land base.

21 DR. MIDDLETON: I have to be careful here  
22 because I am getting this secondhand and I don't  
23 pretend to be the expert in the field. But my  
24 understanding of the work within Ontario Hydro is they  
25 are developing things like this (indicating) because

1 they have to get down to this level of detail in an  
2 operational system and they cannot simply bring that in  
3 from other places.

4 So they are generating from satellite  
5 images and so on and putting it straight into their  
6 system, data analagous to the resolution of FRI and  
7 other sorts of things for themselves because they can't  
8 get that elsewhere. That's my understanding of what I  
9 have been told.

10 DR. SUFFLING: Madam Chair, if I can just  
11 add to that. The FRI data are available up to a  
12 certain parallel, which is around 51, 50, or something.  
13 I stand to be corrected on that.

14 After that, as you go along, going  
15 further northwest as they have to to connect with the  
16 Manitoba system, you lose your major data set and it is  
17 like flying into a tunnel in a fast train. Nothing.  
18 So they have to go to satellite imagery to get an  
19 up-to-date picture of what the land was like. They  
20 have no choice.

21 MADAM CHAIR: They are going to satellite  
22 imagery but they are not doing the so-called ground  
23 truthing?

24 DR. MIDDLETON: Oh, yes, they are. The  
25 way that they go -- you can't see it from here, but



1 there are classes associated with each of these  
2 colours, and they have a number of ground truthing  
3 stations where they pick an area such as this one where  
4 there is a great variety of uses on the ground, and  
5 they have an extensive monitoring system on the ground  
6 to make the link from what the satellite tells them to  
7 what's on the ground, whatever eye tells them, so that  
8 that step can then be left out as you make this thing  
9 operational in other places.

10 MR. MARTEL: Money is not a constraint  
11 for Hydro, though.

12 DR. MIDDLETON: Such is our  
13 understanding. (Laughter)

14 If I can give a serious answer to that.  
15 I think it would be incorrect to say that this is a  
16 horrendously expensive sort of operation they are  
17 doing.

18 This is one small part within Ontario Hydro. The  
19 machinery that they have going is very impressive to an  
20 outsider like me, but we are not talking, I don't think  
21 we are talking hundreds of millions of dollars or  
22 anything remotely like that here.

23 MADAM CHAIR: Nor are you suggesting that  
24 if the Ministry of Natural Resources simply possessed  
25 the data that Hydro is generating, that would be enough



1 for them to undertake landscape management?

2 DR. MIDDLETON: I think if there was a  
3 co-operative agreement between the work that has been  
4 done within Ontario Hydro today and the work that is  
5 already going on within the Ministry of Natural  
6 Resources today, that we would be a very large step  
7 towards this ability to deal with this kind of stuff  
8 for Ontario in general. There would be considerable  
9 scoping.

10 MS. BLASTORAH: Q. I just would like to  
11 come back to one issue that you raised generally in  
12 response to Mrs. Koven's question: that was the issue  
13 of costs. But I would like to step back a bit to a  
14 more general discussion in terms of what you have  
15 proposed.

16 In MNR interrogatory No. 1 which is in  
17 the package of interrogatories we handed out, and this  
18 is 1 not A, so it's not on the first page.

19 DR. MIDDLETON: A. This is 1749A?

20 Q. Yes.

21 A. Sorry, I don't have it.

22 Q. We have an extra copy. Do you have  
23 that?

24 MR. MARTEL: Which one are we on, Ms.  
25 Blastorah?

1 MS. BLASTORAH: It is MNR interrogatory  
2 No. 1. There is an A, which is the front page. It was  
3 a numbering error. It is the second page in the  
4 package.

5 Q. In this interrogatory, we asked you  
6 what cost estimates have been made or we asked Forests  
7 for Tomorrow what cost estimates had been made for the  
8 implementation of specific terms and conditions that  
9 you have been speaking to; and if you were unable to  
10 give cost estimates, could you at least indicate what  
11 kind of cost items would be included. And you  
12 responded to that interrogatory by providing a number  
13 of cost items.

14 And I take it from that you didn't feel  
15 in a position to actually cost what you proposed?

16 DR. MIDDLETON: A. No. I have done some  
17 more checking since that time. It's still not possible  
18 to give an exact cost but I will put out some figures  
19 for comparisons, say.

20 First of all, the Ministry of Natural  
21 Resources already has, I understand, the ARC info  
22 system, that is the common software for the GIS system,  
23 in part of it, and this is significant because the  
24 software costs are often a significant total of the  
25 whole. And the pricing for software has the same logic

1 as is the pricing of airline tickets which is none that  
2 is obvious. It depends on whether you have it all  
3 right, site licences and so on. So that's a  
4 difficulty.

5 I asked the expert at my university in  
6 GIS systems. They had recently got one which is a very  
7 powerful system. I can't say whether it's the same  
8 level as the MNR's or not. And getting approximate  
9 price indications from him, he said certainly under  
10 \$10,000 for that one.

11 Q. I'm sorry. If I could just clarify.  
12 When you say for that one, you indicated that the  
13 Ministry had this in some locations; did I understand  
14 you correctly?

15 A. Somewhere within the Ministry. I am  
16 not sure physically where it is, but I know that the  
17 Ministry does have it in some places. They hold  
18 seminars on its use and that sort of thing.

19 Q. And you don't know to what extent  
20 it's available within the Ministry?

21 A. No, I do not.

22 Q. I'm sorry I didn't mean to interrupt  
23 you.

24 A. Just to finish that off. I don't  
25 want to in any sense say that this is the figure for a

1 university is the same as what would be needed for a  
2 district office; but to put it in as an order of  
3 magnitude, we are talking about something in the order  
4 of a pick-up truck per district for software and  
5 hardware of a very sophisticated sort of system, at  
6 least as a starting point for talking about it.

7 Q. And that is for ARC info?

8 A. I wouldn't even make it that  
9 specific. This probably would be more for -- the  
10 university system was another one called SPANS which  
11 has different parameters and so on.

12 Q. And so when you indicated in your  
13 evidence, and I think Dr. Suffling was of the same  
14 opinion, if I am correct, Dr. Suffling, that  
15 implementing your proposal, the extra step you have  
16 gone beyond Essa would be relatively straightforward  
17 and wouldn't be a huge cost factor? It was on the  
18 basis of those kinds of costing numbers that you were  
19 making that statement?

20 A. Something in that order, yes.

21 DR. SUFFLING: A. I think, ma'am, that  
22 this needs saying to be fair to all parties in the -  
23 hearing: that to get hung up on the software or the  
24 hardware of these systems would, with due respect,  
25 probably be a mistake because the most expensive



1 component is the body that you hire to run the system.  
2 It is the cost of the salary for the scientist and the  
3 technician or the person who goes walking in and inputs  
4 that information. Those are the things that will  
5 really take up most of the budget.

6 Q. And following up on that to the  
7 extent that more than one body is needed, in other  
8 words there would be training of whoever is involved in  
9 doing this work, not only running the software but  
10 other aspects, there would be additional staff time  
11 required in terms of doing any field surveys and so on  
12 required, that kind of element would have to be added  
13 in as well? Would you agree?

14 A. When you said additional, I am not  
15 sure I can answer that in the sense that you may lay  
16 out more money to get people to make measurements, but  
17 the benefits may be more than commensurate with that.  
18 So in in the long term in terms of not having to  
19 rectify later mistakes in management, you know, who  
20 knows what the cost/benefits are, what the true ratio  
21 is. I wouldn't want to begin to predict that.

22 But the assumption that I am going with,  
23 and I feel fairly confident about this in a heuristic  
24 sense, is that overall society will benefit from this  
25 approach.



1                   MADAM CHAIR: Ms. Blastorah, the Board  
2       remembers the demonstration of the GIS system that it  
3       was given in Timmins. And various questions were asked  
4       at that point about whether more money could speed up  
5       the process of faster implementation of the system.

6                   Now we didn't take that as evidence  
7       because it was one of our side trips, but the Board's  
8       recall of that was that there are limiting factors that  
9       don't have to do with the amount of money that is put  
10      into it, that the implementation is on a certain  
11      schedule that's limited by staff and understanding its  
12      use and so forth. How do you plan on getting that  
13      evidence before the Board?

14                  MS. BLASTORAH: I think the intent will  
15      be to call evidence in reply in relation to matters  
16      like that.

17                  MR. FREIDIN: Absolutely. I think we  
18      undertook that we were going to do that and we are  
19      going to do that.

20                  MS. BLASTORAH: Q. Just coming back then  
21      to clarify a few more I think relatively minor points.  
22      There was some discussion throughout your evidence,  
23      gentlemen, in relation to eco-section and what an  
24      eco-section is, and so on.

25                  And I think at one point Mr. Martel asked

1 I believe it was Dr. Middleton how many eco-sections  
2 there are in the province. And either I didn't catch  
3 it or you may have got sidetracked from your answer,  
4 but I am not sure that you did answer that question and  
5 I would ask you to just answer it now if you have not.

6 DR. MIDDLETON: A. I... One moment, Dr.  
7 Suffling has --

8 DR. SUFFLING: I am not sure I can find  
9 it, but I'm just having a look here.

10 DR. BENDELL: I think it's on the map, is  
11 it not?

12 DR. SUFFLING: Those are eco-districts.

13 DR. BENDELL: Oh, yes, I see.

14 DR. SUFFLING: You are talking about an  
15 eco-section?

16 MS. BLASTORAH: Q. Eco-section is what I  
17 was asking about.

18 DR. MIDDLETON: A. I don't have that  
19 figure in my head. Unless it's here, I cannot answer  
20 that question.

21 Q. You don't have any idea in your  
22 head -- or I was just wondering if you don't know the  
23 exact number, and it doesn't have to be exact, I was  
24 trying to get an idea of your sense of the type of  
25 number, the order of magnitude.

1 A. May I look at the map?

2 Q. Certainly, certainly.

3 A. Well, the smallest units on this map  
4 are the next one up, the eco-districts, and they are  
5 numbered into the 80, approximately, just scanning  
6 here. So the number of eco-sections I understand would  
7 be something in the order of an order of magnitude  
8 bigger than that, so some hundreds would be my very  
9 rough estimate, unless Dr. Suffling can find it.

10 DR. SUFFLING: A. There are 79  
11 eco-districts; and assuming that each one will be  
12 possibly broken into, let's say 10 to 20, you would end  
13 up between, let's say between 750 and 2-1/2 thousand.

14 Q. Thank you.

15 MADAM CHAIR: Excuse me, Dr. Suffling,  
16 you are referring to this scheme?

17 DR. SUFFLING: We are going, ma'am, one  
18 level below the smallest level shown on the map.

19 MADAM CHAIR: Which is an eco-district?

20 DR. SUFFLING: Which is an eco-district.

21 MADAM CHAIR: And there are 79  
22 eco-districts shown on the map.

23 DR. SUFFLING: There are 79 eco-districts  
24 according to table in here, and I am making an  
25 assumption, and it is only a guess, that there will be

1 somewhere between 10 and 20 sections within a district  
2 on average. I might be out there by, you know, by a  
3 whole factor. It might be 10 instead of 20.

4 MS. BLASTORAH: Q. Fine. I just wanted  
5 your understanding of what we were talking about. And  
6 I am correct that those are not mapped; that's why you  
7 are not able to...

8 DR. SUFFLING: A. Oh, they're mapped,  
9 but they are not shown on this map.

10 Q. The eco-sections are mapped on the  
11 ground?

12 A. Oh, yes, yes. I mean they are  
13 delineated.

14 Q. I'm sorry. Let's just be clear.  
15 There is not a map available showing where they are on  
16 the ground?

17 A. Yes, I believe there is.

18 Q. And it's on that; that's your  
19 understanding?

20 A. Yes.

21 MADAM CHAIR: Hold on, Dr. Suffling.  
22 What are discrete eco-systems on the map? Are we  
23 looking at eco-regions or districts or sections? In  
24 other words, when you are talking about ecosystem  
25 boundaries --

1 DR. SUFFLING: Let's stay away from  
2 ecosystem if we can because there is a lot of semantic  
3 argument that goes around that amongst the economists,  
4 except to say that ecosystem is a hierarchical  
5 approach. So you can have an ecosystem at the level of  
6 John Middleton's coffee cup here, or you can blow it up  
7 to the level of the globe. So, we can deal with  
8 ecosystem at any scale.

9 Now, what was the next part of your  
10 question?

11 MADAM CHAIR: What's been put before the  
12 Board is that naturally on the landscape occur  
13 eco-systems around which boundaries are logical and  
14 scientifically justifiable.

15 DR. SUFFLING: Yes.

16 MADAM CHAIR: Now are you trying to tell  
17 us there are 79 times 20 ecological boundaries in  
18 Ontario?

19 DR. SUFFLING: We can keep on going down  
20 through the system. It is rather like, what can I say?  
21 Let's say, looking at the Bell Canada system. And then  
22 you go to - and maybe B.C. Telephone and Alberta  
23 Telephone and so on - you can go down from the national  
24 system to look at the Bell system; and then from the  
25 Bell system you can look at area codes like 416 and



1 519; then I can go down to the level of an exchange  
2 like my own in Kitchener; and I dare say within a  
3 telephone exchange, there might be several other levels  
4 that I am unaware of as a user; but finally perhaps in  
5 a business there is a telephone number and that has  
6 some extensions.

7 So we could look at the system at any  
8 level: as one telephone system; a number of area  
9 codes; a larger number of exchanges; or a huge number  
10 of telephones.

11 MADAM CHAIR: And for planners and  
12 researchers that's all very straightforward and it's a  
13 logical way to look at the land base. But if you are  
14 proposing to put that on to administrative units, I  
15 suggest there isn't an infinite number of eco-units  
16 that you can work with?

17 DR. SUFFLING: No, indeed. The point of  
18 making a hierarchy is not just a technical one but it  
19 is done for planning and management purposes.  
20 Precisely for that reason: that for certain purposes,  
21 you just cannot or do not wish to go down below certain  
22 levels because it is impractical or just not useful.

23 MADAM CHAIR: So what is the cut-off with  
24 respect to what's practical administratively on the  
25 landscape if one considers ecological boundaries to be

1 important? Is it 79 or is it 79 times 20 or...

2 DR. SUFFLING: It depends on what you  
3 want to look at. Ultimately you get down to the  
4 eco-site which is more or less like a stand of trees,  
5 so that for the forester I guess that's an  
6 administrative unit.

7 Now, the person, the Deputy Minister or  
8 Assistant Deputy Minister in Queen's Park doesn't want  
9 to know about that stack of trees. He or she wants to  
10 know about a much larger unit. The stand is not  
11 useful; they want to know about the aggregate.

12 MADAM CHAIR: And this touches on the  
13 Board's question a few days ago. What is the point of  
14 remapping administrative units when that's one aspect  
15 of business that has to get done daily when you could  
16 map separately for planners and research and data  
17 collection and data manipulation any ecosystem mapping  
18 that's necessary?

19 DR. SUFFLING: One could certainly do  
20 this. And I suppose it is one approach that could be  
21 followed. What bothers me about that is that then you  
22 end up with two systems which are not intermeshed and  
23 one system ends up not listening to the other one.

24 And then there is a double loss. Because  
25 usually it is the economic system that has to do its

1 thing regardless, you know, get on with life. So you  
2 end up with the informational system perhaps commanding  
3 quite a big budget that is being used up, and the  
4 officials and the scientists are happy choking away  
5 doing their thing.

6 And then on the other hand, the economic  
7 system is charging ahead and doing its thing but not  
8 listening to the other system adequately because of  
9 these mismatches.

10 Then eventually somebody turns around and  
11 says, 'What are we spending all this money on  
12 ecosystems for? Nobody is using the information  
13 anyway; let's can the program.'

14 MADAM CHAIR: So getting back to the  
15 question of how would you put administrative boundaries  
16 along ecological lines.

17 DR. SUFFLING: I think Dr. Middleton  
18 wants to respond to that.

19 DR. MIDDLETON: If this realignment were  
20 to be done, I think it is fair to say in some places  
21 you might combine two or more smallish eco-districts  
22 into one administrative district; or in some cases,  
23 where there was a very big eco-district, you might want  
24 to split it into smaller ones.

25 The main point is that if this was going

1 to be done, it was decided this was going to help with  
2 things, one would avoid putting an administrative line  
3 that did not coincide with one of the others. That is  
4 the one level in here that we have some control over  
5 and if it's -- we have the choice to do away with that  
6 kind by coinciding with another. If the benefits of  
7 that make it worthwhile, that's the only place where we  
8 would make a change.

9 MR. MARTEL: Well, you have suggested 79  
10 eco-districts. I think we have a hundred management  
11 units, 99 or a hundred, give or take.

12 A lot of the argument we have had  
13 presented by some people has been that these really in  
14 many instances are too big, the forester can't get to  
15 cover it, there aren't enough foresters, they have too  
16 many hectares per forester to look after.

17 Once you get past the 79, where do you  
18 go? If a hundred are too big, according to some  
19 people, 79 is your eco-districts, once you go below  
20 that, is it not a mishmash all over then? Where do you  
21 start to draw boundaries after that?

22 DR. SUFFLING: Perhaps I could respond to  
23 that just very briefly. If you have a very large  
24 management unit that perhaps there is a consensus that  
25 something needs to be done to break it up. Let's say



1 this is your management unit or licence and it has  
2 quite artificial boundaries. Now, somebody has or some  
3 people have decided that that is too big an area to  
4 manage, you should in fact have, let's say, four  
5 working circles within there.

6 Now, let's assume that either the road  
7 system that you have is fairly flexible and amenable to  
8 change or perhaps there isn't a road system in there  
9 yet and you have to put one in, then, you know, one way  
10 of doing it -- perhaps the traditional way might be to  
11 divide it into four administrative boundaries like  
12 this,

13 you know, that suits some particular purpose. Maybe  
14 they go along the edges of baseline maps. And that's  
15 not uncommon. Or along a certain parallel.

16 The alternative might be that you find  
17 you have got three or five or four ecological divisions  
18 that are quite logical. Then if you are making working  
19 circles, why not make them to conform with the  
20 ecological boundaries. I have a strong suspicion that  
21 it will aid the forester in silviculture and it will  
22 aid conservation and other aspects as well.

23 So this will be the basis really of what  
24 we are arguing that if somebody is tinkering with  
25 boundaries, for heaven's sake let them do it in a way



1 that takes cognizance of ecological reality, rather  
2 than some pedastral (phoen.) boundary dictated by a  
3 surveyer in 1906 or something.

4 MADAM CHAIR: So your argument is not  
5 within five years to remap all of Ontario?

6 DR. SUFFLING: Well, I can't speak for  
7 FFT. But my own sense of this is that to the extent  
8 that the boundaries are being changed, then it should  
9 go in this direction. If you decided, for instance,  
10 either on ecological grounds or for some silvicultural  
11 reason or economic reason that you wanted to have 20  
12 per cent or 50 per cent of management units redesigned  
13 or 5 per cent, then I would say, 'Please, do go about  
14 it in a way that recognizes ecological reality if you  
15 are moving boundaries.'

16 MADAM CHAIR: Ms. Blastorah.

17 MS. BLASTORAH: Q. Dr. Suffling, I would  
18 like to just pursue this a little farther leaving aside  
19 the question of the administrative boundaries which I  
20 think you have just discussed.

21 The criteria that you have outlined in  
22 the appendix to the witness statement and which are  
23 reflected in term and condition 26, at least the terms  
24 and conditions state that those will be applied at the  
25 eco-section level. And I just would like to clarify

1 one or two questions in relation to that.

2 Your definition of landscape unit again  
3 involves the concepts, as I understand it, of soil or  
4 some kind of structural in soils, age and vegetation.  
5 Am I correct? I think you told us that in an answer to  
6 an interrogatory.

7 DR. SUFFLING: A. Yes. I guess those  
8 would be the primary determinants. And then the fauna  
9 would fit in with that, more or less, it would be a  
10 long step. Obviously has some effects on vegetation,  
11 on soils, but by and large, yes.

12 Q. Leaving aside for purposes of my  
13 questions the faunal element, given those three  
14 criteria in terms of the vegetation, where age class is  
15 part of the definition of landscape unit, as you have  
16 just indicated, at small -- I guess it would be large  
17 scale small area, would you not agree that in some  
18 instances it might be impossible to maintain a certain  
19 pattern or even the existence of a type of landscape  
20 unit over a very small area insofar as, for example, if  
21 a large fire had gone through you might have a large  
22 area of even age class?

23 A. Absolutely.

24 Q. So in thoses cases, would you agree  
25 it would be appropriate to step back and look at the

1 diversity measures at a larger scale?

2 A. You might want to be measuring  
3 diversity there on a small scale, but --

4 Q. I'm sorry I shouldn't use large and  
5 small scale; I always get them backwards. On a larger  
6 area.

7 A. Large area. Let's say as a general  
8 recurring management procedure, you would probably want  
9 to step back a bit, yes.

10 Q. And I understand that to be  
11 consistent with the idea expressed by Dr. Middleton at  
12 the outset of his evidence that landscape management is  
13 really the top down part of your two-strategy approach,  
14 featured species or the local species side of it, which  
15 is strategy 2, being the bottom up?

16 In other words, if I understand you  
17 correctly, gentlemen, the idea is you are looking at  
18 the big picture by doing landscape management and  
19 ensuring that things are going along well at the big  
20 picture; is that a fair statement?

21 A. Yes, I think so. As a very broad  
22 generalization, I would accept that.

23 DR. MIDDLETON: A. But keeping the  
24 distinction that the big picture is not necessarily the  
25 big area. They can overlap. But the big picture

1 doesn't necessarily mean looking only at the  
2 Ontario-wide focus of things.

3 Q. But in some cases it would be  
4 appropriate, I think you have just indicated, to go to  
5 a larger geographic area than an eco-section?

6 A. At that lower end of the continuum,  
7 yes, there might be some room for adjusting the scale  
8 at which one does the calculations at that lower end in  
9 special circumstances.

10 Q. And bringing back in the faunal  
11 element now, to the extent that wildlife species; and  
12 by that I am referring to animals specifically, but --  
13 well perhaps leave it open, wildlife species. To the  
14 extent that they are specific in their habitat  
15 requirements in relation to a particular age class, it  
16 might be that populations would decline in a very small  
17 area simply because of age class successional changes?

18 DR. SUFFLING: A. Yes.

19 Q. And that would be part of the natural  
20 cycle?

21 A. Yes. Some will go down and some will  
22 come up.

23 Q. And those natural fluctuations could  
24 happen -- or by those natural fluctuations, that has  
25 nothing to do with timber management activities



1 necessarily? A fire could go through and change the  
2 age class?

3 A. It could be due to natural processes  
4 and it could be due to management, yes.

5 Q. And in those cases, it would again be  
6 very hard to maintain populations at those smaller  
7 geographic areas, on those smaller geographic areas?

8 DR. MIDDLETON: A. All of this is  
9 talking about a very small geographic area. We should  
10 be defining small here probably.

11 DR. SUFFLING: A. If we go back to your  
12 definition, I think you used the word eco-section a few  
13 moments ago?

14 Q. That's what I was starting to --

15 A. I was a little concerned about that,  
16 although it went by before I noticed it.

17 But eco-section is quite a large area.  
18 Eco-site is sort of probably one up from a stand level,  
19 if we can put it in terms that people will grasp very  
20 readily. Then that would probably be the smallest  
21 working scale, if you like, for making assessments.

22 Q. Would it be fair to say that for a  
23 different species, it would be appropriate to measure  
24 population levels at different geographic scales? You  
25 might measure, for instance, a vole at a different



1 geographic scale than you would a moose? The ranges  
2 are different?

3 A. Probably. Yes.

4 Q. I would like to just turn briefly --

5 MADAM CHAIR: One moment, Ms. Blastorah.

6 I think we are going to have to take a  
7 short break. How much longer are you going to be, Ms.  
8 Blastorah?

9 MS. BLASTORAH: Well, it had taken  
10 unfortunately a little longer than I had expected. I  
11 have two more questions and Mr. Freidin, I understand,  
12 has about twenty minutes to half an hour, so I believe  
13 we could still finish

14 The two questions that I have remaining,  
15 actually, Mrs. Koven, I can finish I think quite  
16 briefly before the break.

17 MADAM CHAIR: Okay. Why don't you go  
18 ahead.

19 MS. BLASTORAH: I will attempt to do this  
20 quite quickly.

21 Q. If you can just turn briefly, Panel,  
22 to Term and Condition 39(3), which is the local effects  
23 monitoring term and condition Forests for Tomorrow has  
24 proposed. I would just like to clarify a couple of  
25 things in terms of that term and condition.

1 MADAM CHAIR: Which page are we on. Ms.  
2 Blastorah?

3 MS. BLASTORAH: I'm sorry, I've got  
4 39(3). I believe that may be the wrong number.

5 MR. LINDGREN: It's on page 34 of the FFT  
6 terms and conditions.

7 MS. BLASTORAH: And it is term and  
8 condition 39(3), I'm sorry, it's on page 34.

9 Q. This term and condition deals with  
10 monitoring of the effects of timber management, as I  
11 understand it, at the timber management plan level.

12 And I just would like to clarify what is  
13 included in this definition -- or in this term and  
14 condition, rather. As I understand it, this term and  
15 condition requires monitoring for the effects of timber  
16 management on the five classes of species listed here?

17 DR. MIDDLETON: A. The five classes in  
18 our second strategy.

19 Q. Yes. And you indicated you supported  
20 this, Dr. Middleton.

21 A. Yes.

22 Q. Now, term and condition 39(3)(d)  
23 indicates that the environmental effects monitoring  
24 program set out in the timber management plan shall  
25 contain particulars of how the population will be

1 monitored.

2 And I was just wondering if you could  
3 give me what is intended by that, if you could clarify  
4 for me what is intended will be done to monitor  
5 populations in these five categories at the timber  
6 management plan level?

7 A. I am not sure I can answer that  
8 question. I can propose ways in which I would set up  
9 the monitoring system, but I don't think that's the  
10 question you are asking.

11 Q. No. Perhaps I can short-circuit it a  
12 bit. Is it intended that every species in each of  
13 these five categories will be inventoried exhaustively?  
14 Is that what was intended?

15 A. I wouldn't think so, no. That's  
16 rarely something that we can do.

17 DR. SUFFLING: A. I think I would see  
18 this probably as -- the way I could imagine it working  
19 anyway would be that there would be some kind of  
20 provincial manual that would lay down, you know, what  
21 would you do with a small colony of rare plants, how do  
22 you go about it.

23 Now it would tell you according to their  
24 significance the size of the colony and the apparent  
25 growth sort of stability of the population numbers. It

1 would tell you how to go about it.

2 So it would say, for instance, 'Okay,  
3 this is a not very rare species, it is rare but not  
4 terribly rare, in relatively small numbers and there is  
5 no indication of any land use change going on and there  
6 has been no fire. Succession is happening slowly  
7 apparently and it looks just about the same as five  
8 years ago; perhaps there could be some kind of look-see  
9 approach.'

10 Now on the other hand, here is a colony  
11 of plants. Suddenly you discover a small colony of  
12 small white ladies that was very, very, very  
13 significant, apparently very close to the cutting area  
14 where the cutting has already been going ahead and you  
15 didn't know about them. And there is a change going  
16 on, there is a threat, and there is some indication  
17 that numbers are changing, then maybe the guidelines  
18 would say 'Go get yourself a technician or a consultant  
19 and throw some quadrats, put some numbers on a graph  
20 and see what's happening.' And then some kind of  
21 follow-up if there was a change.

22 So there could be a hierarchy of actions.  
23 And it could range from a qualified person walking into  
24 the area and saying, 'Yup, it's still here' all the way  
25 through to an exhaustive sampling procedure with



1 computer analysis and advice taken. And the procedure  
2 would have match the significance of the resource being  
3 observed.

4 Q. And my second question in relation to  
5 that is similar. I just want to clarify what is  
6 intended by the last part of subsection (d) where it  
7 says how the relationship of population changes to  
8 habitat changes will be determined. I was a little  
9 confused by that because I understood that one of the  
10 things that will be coming out of the Essa workshop at  
11 the end of these research plans will be some attempt at  
12 those -- or some system to develop those habitat  
13 population linkages.

14 A. Again it could probably be some  
15 general guidelines. For instance, you have got a shade  
16 intolerant plant species, and you have a rapidly  
17 closing canopy overhead with increasing shade, and you  
18 know there is a problem developing here that could be a  
19 means of sort of flagging where a problem is likely and  
20 then some action could be taken.

21 Maybe in this case it will be actually  
22 coming in and having some logging done, just for the  
23 purpose of opening the area up. And that has been done  
24 in fact in Southern Ontario to encourage oak tree  
25 production and to encourage the plants that go along



1 with oak trees. So economics and conservation  
2 sometimes go along quite nicely.

3 Q. Is it fair to say that what is not  
4 intended by this is the kind of cause/effect  
5 relationship that will in fact be coming out of the  
6 Essa research work?

7 DR. MIDDLETON: A. I think the Essa  
8 level of things would be much more the cause and effect  
9 things on the detailed species biology and so on and  
10 not the that that is going to be repeated in each  
11 working unit from scratch.

12 Q. Thank you. My last question is for  
13 you, Dr. Middleton. I think it will quite brief. Mr.  
14 Lindgren took you to term and condition 39(g) which  
15 deals with roadless areas.

16 A. Yes -- sorry, 32(g).

17 Q. I can't read my own writing. I'm  
18 sorry, 32(g).

19 A. I have it.

20 Q. And you indicated that you supported  
21 that. And I took your comment down at the time to be  
22 that you saw these roadless areas as fitting within  
23 your concept of parks and reserves. Did I understand  
24 you correctly?

25 A. They have the potential to fit into

1 that category. They won't automatically, but the point  
2 I was trying to make was that there is more than one  
3 way to set up the equivalent of a good park and reserve  
4 system. This might fit into that category if done  
5 properly.

6 Q. Would it be fair to say then that you  
7 weren't suggesting there should be an additional 12 per  
8 cent of roadless areas on top of parks and reserves?

9 A. I could envisage a system where the  
10 roadless areas were all incorporated as parks and  
11 reserves; and if we went to that extreme, it could well  
12 be that that makes up the 12 per cent. That wouldn't  
13 happen by any means automatically, but there is some  
14 potential there.

15 MS. BLASTORAH: Those are my questions  
16 for the Board, Mrs. Koven. Thank you very much, Panel.

17 Mr. Freidin will have one or two -- well,  
18 several additional questions for you.

19 MADAM CHAIR: Mr. Freidin, we will take a  
20 fifteen-minute break now and you will be done...

21 MR. FREIDIN: As quickly as I can.

22 MADAM CHAIR: By four or shortly after?

23 MR. FREIDIN: I may ask you to go a  
24 little longer. If I get straight answers, I will get  
25 finished by four o'clock.

1 MR. LINDGREN: Mr. Freidin will get  
2 straight answers.

3 MS. BLASTORAH: I apologize that it took  
4 a little longer, Mrs. Koven. There were matters of  
5 clarification. Thank you.

6 ---Recess at 3:17 p.m.

7 ---On resuming at 3:35 p.m.

8 MADAM CHAIR: Mr. Freidin.

9 CROSS-EXAMINATION BY MR. FREIDIN:

10 Q. Dr. Suffling, could you please turn  
11 to Exhibit 1729, Overhead 17.

12 DR. SUFFLING: A. Are those the graphs  
13 about fires that we looked at on Tuesday?

14 Q. That is correct.

15 It is the last page, I believe, Madam  
16 Chair.

17 And I believe it was in relation to this  
18 particular overhead that you gave evidence about  
19 calculating a ratio where you compared 1983 fire year  
20 to the 1987 fire year; one being a high year, one being  
21 a low or moderate year.

22 You said you calculated some sort of a  
23 ratio which I think resulted in this overhead and that  
24 indicated to you that small fires are being controlled  
25 but large fires are not; is that correct?

1 A. By and large, yes.

2 Q. Now what was the ratio that you in  
3 fact developed? What I am interested in is what are  
4 the numbers which go into your ratio, what's the  
5 enumerator, what's the denominator?

6 A. I estimated the total area of fires  
7 at given sites and that would be a class, you know,  
8 like 4 to 40 hectares.

9 Q. Yes.

10 A. And I did this for 1983, the high  
11 fire year; and for 1987, the low fire year. Now, if  
12 you divide '83 high by '87 low, you expect to get a  
13 ratio that is more than 1.

14 Q. Yes, I understand that.

15 A. If all fires of different individual  
16 sizes are being controlled, on the average, to the same  
17 extent, then that ratio is not going to differ very  
18 much between small fires and large fires.

19 Let's take an example. You hypothesize  
20 that in a bad fire year, the smallest class of fires  
21 you are going to get are 100 hectares total in '83, 50  
22 in '87, so your ratio is, say, 2.

23 Then you go up to the largest size of  
24 fire of more than 200 hectares. You do the same thing.  
25 You have 10,000 hectares in one case, 5,000 in the

1 other; you get the same ratio 2. And so you draw the  
2 conclusion that fire fighters are doing just about as  
3 good a job on the big fires as on the small fires. So  
4 that would be what a scientist would call a null  
5 hypothesis, sort of all things being equal statement.

6 And then you look at reality and you find  
7 that with the largest size class of fires, the ratio in  
8 fact goes not just away from 1 to 1 but goes way higher  
9 than with any of the other classes. Because it's a  
10 very high ratio, you conclude that fires in the very  
11 largest class are basically getting away on people.

12 And if you then compare that with the  
13 practical experience in the North, just watching fire  
14 fighters at work and watching teams at work, it is  
15 rather like a battlefield situation where there is a,  
16 to use the analogy, there is an attack going on. You  
17 put all your troops up to the front trenches and you  
18 fire away and you keep the troops at bay for a while,  
19 but eventually there are just too many of them and they  
20 are coming too thick and too fast and they overwhelm  
21 you.

22 And that kind of fire situation doesn't  
23 happen very often; but when it does, then the fires  
24 that result, and they are generally big fires, are  
25 essentially burning at whatever rate the weather



1 prescribes rather than according to fire lines or hoses  
2 or anything else you throw up.

3 Q. And in Overhead 17 of Exhibit 1729,  
4 is not intended to -- is that intended to reflect  
5 actual numbers or is that just those theoretical  
6 numbers?

7 A. No. 17 is the third graph I presume.  
8 Let's just put it up so we know we are talking about  
9 the same thing.

10 Leaving aside my scribble for the moment  
11 and looking at the original --

12 Q. It appears to be actual numbers. You  
13 have got '83 to '87 on the left hand --

14 A. These are actual figures for two sort  
15 of randomly picked years. I just picked a high year  
16 and a low year and I did verify it with a number of  
17 other years picked in a similar way.

18 Q. And as I understand your evidence,  
19 are you saying that if in fact the large fires were  
20 being controlled sort of equally well as the small  
21 ones, you would expect the 200 histogram to be down at  
22 a level equal to the one for the smaller sized classes;  
23 is that your point?

24 A. I am hypothesizing that if the fire  
25 control was equally effective, you would have another

1 ratio down here somewhere around the same level.

2 Q. Thanks, that's all I wanted to know,  
3 thank you.

4 A. I probably didn't explain that very  
5 well on Tuesday.

6 Q. You did it very well now.

7 Dr. Bendell, you indicated during your  
8 cross-examination from Mr. Hanna that, as I understood  
9 it, that the type of landscape which would be created  
10 as a result of implementation of the moose habitat  
11 guidelines, the ideal size of clearcuts, et cetera,  
12 would result in something unacceptable to you. Did I  
13 understand you correctly?

14 DR. BENDELL: A. I suppose it's how you  
15 define unacceptable. That obviously presents one  
16 design. And I guess the point I am trying to make is  
17 that that is a design which favours the featured  
18 species which is the moose. And in that design, pine  
19 is not figured into the make-up of the forest types.  
20 As a consequence, in that landscape, what can be  
21 provided by the pine is not available, is ignored.

22 Q. Is there anything other than your  
23 belief that pine is ignored that went into your -- gave  
24 rise to your concern that application of the moose  
25 habitat guidelines, the ideal 80 to 130 hectares was

1 going to create some sort of unacceptable landscape  
2 from a wildlife point of view?

3 A. No, I was just trying to use that as  
4 one example. What I am really concerned about is this  
5 idea of a featured species -- and I have no problem  
6 with the featured species because by itself a featured  
7 species, as the name suggests, is something you want to  
8 feature for whatever purpose.

9 But where we get into trouble is where we  
10 begin to use the featured species as a surrogate for  
11 all, as you know, other parts of the environment, and  
12 that of course is where we part company.

13 Q. Okay. Thank you.

14 Dr. Suffling, do you agree that stands in  
15 the boreal forest in the natural forest we find were  
16 originated through natural disturbance of one kind or  
17 another?

18 DR. SUFFLING: A. I guess logically all  
19 of them have to have ultimately some origin  
20 disturbances.

21 Q. Do you agree that the species  
22 present -- let's assume the disturbance is fire for the  
23 moment. Do you agree that the species present in the  
24 pre-fire forest will have an effect on the sort of  
25 succession you will have on that site if a fire goes

1 through?

2 A. Very often, yes.

3 Q. And did I understand your evidence to  
4 be that the soil and moisture regimes or the mosaic of  
5 soil and moisture regimes could also affect the species  
6 which will regenerate after fire?

7 A. Yes.

8 Q. Do you agree that the degree of  
9 disturbance, and let's stick with fire, which can occur  
10 naturally can vary based on its magnitude, its  
11 frequency, and its intensity?

12 A. Those are the standard three  
13 variables, general variables, that are usually  
14 considered in fire ecology, yes.

15 Q. And would you agree therefore that  
16 when we examine an FRI map, which is made up of a  
17 number of contiguous stands of different types, but  
18 with the same age class, we can assume that they  
19 originated through the same disturbance?

20 A. Normally, yes. There might be the  
21 odd exception.

22 Q. Do you agree that the understorey or  
23 the lesser vegetation of those stands could vary as  
24 well for the same reason, different soil and moisture  
25 regimes? We are not just talking about the canopy, we

1 are talking about from stand to stand, the under-storey  
2 could differ for the very same reasons?

3 A. Yes. Sometimes the understorey will  
4 differ along with the overstorey and sometimes the  
5 differences will not quite match, if I can put it in  
6 very crude terms.

7 Q. So far we agree then that the size of  
8 the disturbance can affect the age?

9 A. The size of the disturbance affects  
10 the age?

11 Q. Yes, the age that we find in a bunch  
12 of contiguous stands -- sorry, the size of the age  
13 class that we find, one age class could be affected by  
14 the size of the disturbance that went through?

15 A. We are talking about an individual  
16 patch of fire disturbance or logging perhaps?

17 Q. Yes, yes.

18 A. Are we talking just fire at the  
19 moment?

20 Q. Yes.

21 A. Okay. Let me see if I follow you  
22 here. The size of the patch...

23 Q. Tell you what. Let's forget the  
24 question.

25 A. All right.



1 Q. Am I correct that you would want  
2 silvicultural prescriptions to be ones which would  
3 result in returning the mosaic at the next rotation to  
4 the pre-harvest condition; and by preharvest condition,  
5 I mean similar pattern structure and shape?

6 A. From the point of view of a natural  
7 historian, that would certainly be the case. Of  
8 course, a commercial forester might have different  
9 ideas on --

10 Q. From the point of a landscape  
11 manager, would that be a desirable thing?

12 A. Well, look, let's not claim a patent  
13 on this. I think anybody can be a landscape manager.  
14 They have just got different ideas about how to do it.

15 Q. Right. But in terms of if you were  
16 concerned about maintaining this mosaic that you have  
17 described, which has species and structural components  
18 to it, am I correct that you would want, assuming you  
19 are going to have a forest industry out there doing  
20 things in the forest, you would want silvicultural  
21 prescriptions to be ones which would result in  
22 returning the mosaic that you found when you got there  
23 to harvest, you would want to in fact return that  
24 mosaic in terms of its pattern, its structure, and its  
25 shape, you would like that to be there for the next

1 rotation as well?

2 A. Overall for the whole landscape, yes,  
3 but not necessarily all the time in case of an  
4 individual patch.

5 Q. Okay. If silvicultural prescriptions  
6 did not do that, did not give you that result, that is,  
7 if application of silvicultural standards resulted in  
8 the conversion of a large area of conifer predominated  
9 stands to stands predominated by deciduous species,  
10 would that or could that in fact be in contravention of  
11 your landscape rules to in fact maintain landscape,  
12 which is to maintain landscape units?

13 A. I can't answer that unless I see the  
14 individual piece of land and the individual conditions  
15 that pertain. It's too general a question for one to  
16 give a definitive answer.

17 Q. As I understand your evidence, a  
18 stand or let me use your words, an ecosystem type--

19 A. Right.

20 Q. --could in fact in some cases be a  
21 stand but not necessarily so?

22 A. Well, a type is a type.

23 Q. I am trying to use your words.

24 A. Yes, but I am wondering whether you  
25 are using them as I used them. A type to me is a -- if

1 people understand the term, it's a taxonomy, it's a  
2 classification. It doesn't have a spatial problem.

3 Q. What if in one of your eco-districts  
4 you had a certain percentage of spruce stands--

5 A. Right.

6 Q. --with all the structure and species  
7 composition which goes along with that.

8 A. Right.

9 Q. If the implementation of a  
10 silvicultural prescription in this area, let's call it  
11 an eco-district, it doesn't make any difference, an  
12 eco-district. If the implementation of a silvicultural  
13 prescription was such that it would in fact cause the  
14 loss in that eco-district of spruce stands, but because  
15 in fact what you were doing silviculturally ended up  
16 turning them into deciduous stands, you wouldn't like  
17 that from a landscape management point of view; is that  
18 fair enough?

19 A. If the conversion was going in a  
20 direction which was, first of all, contrary to what was  
21 prevalent in nature; and, secondly, if you were really  
22 talking about the eco-district level, in other words, a  
23 very large area, yes, I would be opposed to that.

24 If on the other hand it was happening at  
25 a much more local level, then providing the criterion

1 was met further up scale, then that would be more  
2 acceptable.

3 Q. So you could have a situation where  
4 you would not be meeting that criteria at the small  
5 level but you could go up and meet it at the bigger  
6 level?

7 A. Oh, absolutely. I mean when you are  
8 looking at an individual stand under a natural regime,  
9 you expect the ecological condition in that stand over  
10 a hundred years or so or two hundred years to fluctuate  
11 wildly.

12 I can come back to a diagram that I used  
13 earlier in the week, be it ever so crude. But, if you  
14 have a very small area over a small period of time,  
15 let's say this is one stand over ten years, during  
16 which period of time there is a fire or a harvesting  
17 episode or a bugworm outbreak, then you can expect that  
18 small patch to do something wild, you know, to go in  
19 one direction or another. And that's not necessarily  
20 bad.

21 Q. But it would be bad if you got up to  
22 the intermediate level and it was happening all over  
23 the place so that the aggregate of the smalls was  
24 causing this substantial change?

25 A. That could be a problem. So if you

1 take it to the other extreme, up to the global level,  
2 and if I see forests on a global level disappearing  
3 rapidly as they are, I get kind of panicky.

4 Q. So somewhere above the small, if we  
5 are talking about this change -- let's say you've got a  
6 silvicultural prescription. It may not bother you if  
7 in fact your spruce stand turns into a deciduous stand  
8 at an eco-section level, let's say, but you start  
9 looking at it at the forest management level, which is  
10 the intermediate, as I understand it, if that's  
11 happening across the management unit because of the way  
12 you are practising forestry because of the  
13 silvicultural standards that you are following, that  
14 would cause you concern; am I right?

15 A. It probably would be a cause for  
16 concern, yes.

17 Q. And using another example. If the  
18 implementation of silvicultural standards resulted in a  
19 large percentage of the area of the undertaking which  
20 is subjected to harvesting being changed from mixed  
21 wood stands which include a substantial conifer  
22 content--

23 A. Yes.

24 Q. --to mixed wood sites or stands with  
25 minimal conifer content, would that or could that in



1 fact contravene your landscape rules or give rise to  
2 concern on your part?

3 A. It would not only give rise to  
4 concern on my part as an ecologist; it would give rise  
5 on my part as a taxpayer because it would probably  
6 indicate that the forest resource, the forest estate in  
7 the whole province was being degraded and was heading  
8 towards a sort of state which you can see today in Nova  
9 Scotia, where the forest industry compared with the  
10 giant that you have in Ontario is pretty minimal.

11 Q. Okay, that's good.

12 Now let's assume for the moment the  
13 situation where we have in the province now where we  
14 have a fire protection program.

15 A. Right.

16 Q. If between stand diversity can be  
17 maintained through the use of artificial regeneration  
18 methods but cannot be maintained through natural  
19 regeneration methods, I assume, sir, that you would  
20 advocate the use of artificial over natural  
21 regeneration methods?

22 A. It's my understanding that FFT has a  
23 condition - and I can't quote it chapter and verse -  
24 but basically where regeneration can occur  
25 satisfactorily, and I think you know the problems with

1 defining what is satisfactory regeneration, everyone's  
2 got a different idea about it.

3 Q. Yes.

4 A. Where it can be done satisfactorily  
5 by natural means, then that should happen.

6 Where natural regeneration cannot be  
7 assured, then it is my understanding that FFT is  
8 willing to see some kind of artificial regeneration  
9 done.

10 Q. Okay. But let's leave aside --  
11 whether you have interpreted FFT's term and condition  
12 correctly, we will leave that to argument later.

13 I am just asking you in the capacity that  
14 you have been qualified that if the between stand  
15 diversity can be maintained through the use of  
16 artificial regeneration methods but cannot through  
17 natural regeneration, I assume, sir, based on all your  
18 evidence that you would advocate the use of artificial  
19 over natural in that case, assuming that you are going  
20 to harvest the stand?

21 A. I have to know what your artificial  
22 methods are before I would be able to give them blanket  
23 approval.

24 Q. Well, let's assume for the moment  
25 that you had to engage in the artificial regeneration

1 methods, certain ones, to in fact maintain the stand  
2 diversity as you have defined it, are you telling --

3 A. All right. Let's make that  
4 assumption and let's make it recorded that it is an  
5 assumption, yes.

6 Q. Yes. On that assumption, you want to  
7 maintain that between stand diversity. Now I am saying  
8 if you can't do it naturally, and it's an assumption,  
9 it is hypothetical, but you can to it artificially,  
10 you've only got two options -- well, if you are going  
11 to harvest, I assume you have got to go artificial and  
12 you would say, 'Yeah, use artificial'?

13 A. Yes, but that's rather like asking me  
14 am I in favour of motorized transport?

15 Q. I don't think it is.

16 A. Now you could be talking about a  
17 Sherman tank in Iraq--

18 Q. Let's not use an --

19 A. --or you can be talking about a Honda  
20 motorcycle --

21 Q. Let's not use analogies, sir. I'm  
22 talking about what happens in the forest.

23 A. I have used them. I like to use them  
24 all the time.

25 Q. I know you do, but I am trying to

1 talk about what happens in the forest.

2 In the situation I have described, would  
3 you or would you not advocate the use of artificial  
4 regeneration methods if that was necessary to maintain  
5 diversity?

6 A. I'm not opposed to artificial  
7 regeneration as a principle, but obviously one would  
8 have to look at what artificial regeneration was being  
9 proposed before one could decide whether it was going  
10 to be effective, ecologically acceptable, economically  
11 benign, and so on and so forth.

12 Q. I am just talking sort of  
13 ecologically from an ecological point of view. Are you  
14 saying that you might be able to maintain the diversity  
15 but still damage the ecology?

16 A. I am not going to give you a blanket  
17 approval of all kinds of artificial regeneration just  
18 to maintain a hypothesis that diversity cannot be  
19 maintained with the forest industry pursuing its  
20 business.

21 Q. What is your objection, sir, if you  
22 want to maintain the diversity and you can do it  
23 through artificial means, what is your objection to  
24 using artificial means?

25 A. I have no objection in principle; it

1 is just that I want to know what the means of  
2 regeneration were.

3 Q. Because you have may some concerns  
4 about --

5 A. I might have concerns about the site  
6 or I might have concerns about the method. I might  
7 have, you know, concerns on social or economic grounds  
8 or anything else. I don't buy pigs in pokes.

9 Q. But assuming the diversity as you  
10 have defined it is as wide as I understand you define  
11 it, that as long as you maintain the diversity, you are  
12 looking after everything? That's sort of generally  
13 what I understand you to be saying. So why not use it?

14 A. It's a necessary but not a sufficient  
15 criterion for a healthy forest.

16 Q. What isn't?

17 A. Diversity.

18 Q. It's not?

19 A. Well, obviously not. I mean...

20 Q. What is?

21 A. We have looked at two levels of  
22 management, haven't we, all week: we have looked at  
23 the landscape level and we have looked at the level of  
24 management species.

25 Q. Okay. If within stand diversity can



1 be maintained through the use of artificial  
2 regeneration but cannot be satisfactorily maintained  
3 through natural regeneration methods, would you  
4 advocate the use of artificial over natural? I am  
5 talking now -- I have changed it from between stand to  
6 within stand.

7 A. As in the previous case, I would want  
8 to know what the situation was on the land and I would  
9 want to know what methods were being proposed.

10 MR. FREIDIN: It's two minutes to four  
11 and I can go get that ham or bologne sandwich you were  
12 talking about because I'm very hungry.

13 Thank you, Dr. Suffling.

14 MADAM CHAIR: Thank you, Mr. Freidin.

15 EXAMINATION BY MADAM CHAIR:

16 Q. Just one question, Dr. Suffling, to  
17 follow up on Mr. Freidin's last question.

18 DR. SUFFLING: A. Yes, Madam Chair.

19 Q. And that is when you have discussed  
20 with us your concepts of landscape management, you have  
21 talked in the future we would want to see this done.

22 One issue that we have had at this  
23 hearing is what has happened in the past and we have  
24 referred to that as a backlog or areas that have been  
25 harvested in the past and have had various successful

1 efforts to regenerate or bring back or whatever.

2 Do your ideas about landscape management  
3 look backwards with respect to repairing areas or  
4 manipulating forests that could be improved in respect  
5 to how you feel about bio-diversity? Or do you just  
6 say 'No, we start today and we don't think about that.'

7 A. No, I am sure there would be no  
8 argument about that. If you have land that is being  
9 degraded below its potential, for whatever reasons,  
10 whether it's attaining heat or a poorly regenerated  
11 area, then anything that can reasonably be done within  
12 economic and social and environmental constraints  
13 should be pursued.

14 MADAM CHAIR: All right, Mr. Lindgren.

15 MR. LINDGREN: It's four o'clock and I  
16 think I have two or three minutes worth of questions.  
17 I don't think I have the strength to ask any more than  
18 that.

19 MADAM CHAIR: This is the Board's  
20 strategy. We wear you down. (Laughter)

21 RE-DIRECT EXAMINATION BY MR. LINDGREN:

22 Q. Dr. Suffling, Mr. Hanna during his  
23 cross-examination asked you what was meant by the term  
24 "novel units". And to answer his question, you  
25 referred to hybrid poplar units and you also referred

1 to the plantation -- or the planting of exotic species.  
2 And you also went on to say that the effects of doing  
3 that may be profound in some areas.

4 And you didn't indicate or explain what  
5 those effects might be, so can I ask you what are the  
6 potential effects of establishing novel units in terms  
7 of wildlife impacts or landscape impacts or  
8 bio-diversity impacts?

9 DR. SUFFLING: A. I think what we have  
10 to do here is step back and take a somewhat general  
11 view of the way that forestry is going. There is this  
12 emphasis in Canada, and probably quite appropriately,  
13 on prime lands.

14 So that means getting lands that are  
15 relatively close to the mills and lands that are  
16 particularly productive into a forestry state that  
17 would increase production of desirable products. The  
18 rotation would be reduced, the total biological  
19 productivity would be increased, and the return on the  
20 land would be increased. And that has implications for  
21 employment and all sorts of other things.

22 Now, there are two things that fall out  
23 of this from an environmental point of view: one is  
24 benign and the other one is not so benign. The benign  
25 part is by concentrating your forestry, not wholly but

1 largely, into these prime lands, there is the potential  
2 to take pressure off marginal lands that could be used  
3 for other purposes primarily, such as, you know, maybe  
4 recreation, whatever it might be. Now, that's the  
5 benign part.

6 The other part that isn't quite so nice  
7 from an ecologist's perspective is that you are going  
8 to take very productive sites and you are going to put  
9 them into a particularly intensive form of management  
10 which is probably the furthest from the natural of any  
11 in the forest.

12 And if we can use an example that I saw  
13 about eighteen months ago in Spain. You have huge  
14 areas planted to eucalyptus stands. They mature very  
15 quickly. Once you put them in, you can virtually never  
16 get rid of them because they sprout from the base.  
17 They grow in such a manner that there is no ground  
18 flora whatsoever, no mosses, no herbs, very few shrubs.

19 From a wildlife point of view, they are  
20 an absolute disaster. The locals don't like them from  
21 the sheep grazing point of view, and there are all  
22 sorts of problems, soil erosion and so on. It  
23 basically is a bad system. But it's typical of  
24 intensive forest management.

25 I am not suggesting that all intensive



1 forest management is bad. It's typical in the sense  
2 that it concentrates all the biological productivity,  
3 if possible, into one economically usable species and  
4 therefore you end up with a very artificial system.

5 Therefore, on prime lands it's going to  
6 be very important to maintain some natural stands as a  
7 reference, as reserves probably in other ways.

8 So, given the direction which forestry is  
9 going in, and it's going to be more and more like  
10 agriculture in this sense, then it is going to be very,  
11 very important to keep a handle on those artificial  
12 systems.

13 When I look at what's happened in Spain  
14 with eucalyptus plantations and with Caribbean pine,  
15 then I get kind of worried and so do people in Spain,  
16 such that -- for instance, one village on the north  
17 coast had turned out four times and ripped out 500,000  
18 eucalyptus seedlings overnight to stop their land, as  
19 they perceive it, being completely altered. So that's  
20 the concern with novel systems at an extreme level.

21 Q. Thank you.

22 Dr. Bendell, I have one question for you  
23 arising out of Mr. Hanna's cross-examination. Mr.  
24 Hanna suggested to you that his client was not  
25 satisfied with using only moose as a featured species



1 and he suggested that perhaps the marten could be used  
2 as a featured species as well, and you said that might  
3 be helpful.

4 Can I ask you whether or not featuring  
5 marten, would that take care of all the other species  
6 of wildlife that are out there, which are not currently  
7 caught by the moose guidelines?

8 DR. BENDELL: A. No.

9 Q. And would featuring marten negate the  
10 need to implement landscape management?

11 A. No.

12 Q. And finally, Dr. Middleton, a  
13 question for you. We spent some time over a few days  
14 going over the criteria that you have proposed and that  
15 FFT have proposed. Mr. Hanna and others have asked a  
16 number of questions on what these criteria mean and how  
17 you would monitor them and so on.

18 Madam Chair, I have indicated that this  
19 is a negotiable item to some extent.

20 But Dr. Middleton, can I ask you this.  
21 If these criteria or similar criteria were to be  
22 followed and implemented in Ontario, would they be  
23 likely to produce a sustainable landscape.

24 DR. MIDDLETON: A. Yes. And in fact  
25 unless some such criteria and some such system are put

1 together, we won't have a sustainable landscape.

2 MR. LINDGREN: Thank you, Madam Chair,  
3 those are my questions.

4 MADAM CHAIR: Thank you, Mr. Lindgren.

5 And the Board thanks the witnesses very  
6 much for all your hard work in coming here to testify  
7 before us. Thank you very much and good luck.

8 We will be adjourning next week.

9 MS. BLASTORAH: Mr. Freidin sounds  
10 disappointed.

11 MADAM CHAIR: Mr. Martel is certainly.

12 MS. BLASTORAH: Yes, heartbroken, I'm  
13 sure, Mr. Martel.

14 MADAM CHAIR: And we will be reconvening  
15 on -- does anyone have a calendar?

16 ---Off the record discussion.

17 MADAM CHAIR: March 5th at nine o'clock.  
18 See you then. Thank you.

19 ---Whereupon the hearing was adjourned at 4:05 p.m., to  
20 be reconvened on Tuesday, March 5, 1991, at 9:00  
a.m.

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